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A
T R E A T I S E
ON
THE DISORDERS OF CHILDHOOD;
VOLUME THE THIRD:
ON THE MANAGEMENT
OF THE
NURSERY, &c.

[Price 10s. 6d. sewed.]

THE TREATISE

OF THE HISTORY OF THE

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A
T R E A T I S E
ON THE
DISORDERS OF CHILDHOOD:
VOLUME THE THIRD.

CONTAINING
FAMILIAR DIRECTIONS ADAPTED TO THE
NURSERY,

AND
The General MANAGEMENT of INFANTS
AND OF
YOUNG CHILDREN:

WITH
AN INTRODUCTION
ON

The NATURE and PROPERTIES of HUMAN-MILK.

*“ La Mere veut que son Enfans soit heureux, qu’il le
“ soit des aprésent, en cela elle a raison; quand
“ elle se trompe sur le Moyens, il faut l’eclairer.”*

ROUSSEAU.”

LONDON,
Printed
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1797.

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DISORDERS OF CHILDHOOD

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ject to medical direction, that this little work would be peculiarly incomplete if confined merely to the Cure of Disorders. In a view, therefore, to such miscellaneous matters, and certain recurring affections too trifling to be ranked as Diseases, this volume is annexed; and it is hoped, may contain every thing on which the most vigilant Parent can wish for information, without tiring her by enlarging upon trifles. In all matters of importance a becoming firmness has been adopted, but I have not equally insisted upon others, wherein the Manners of a refined age cannot comply,

PREFACE.

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comply, nor have urged any peculiar modes which the Generality may not adopt. Should any opinion be more obstinately maintained, it is, probably, in relation to the Aliment most adapted to new-born Infants; an article frequently alluded to in the following pages. In a view to this, an *Introduction* is given on the Nature and Properties of Human-Milk, as more especially connected with the subject of this volume; which, it is hoped, will exhibit a Plan as rational in design, as the author is led to believe it has been successful in its Application.

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ERRATUM.

Page 23, *Note*, for sometime read sometimes.

INTRODUCTION.

ON

THE PROPERTIES

OF

HUMAN-MILK.

IF facts are the basis of sound reasoning, and the source of improvements in science, they will be assiduously cultivated by every investigator of the laws of nature; persuaded that, howsoever misapplied for a season, they must eventually confirm his maxims or correct his mistakes. In this persuasion, the author's attention has been lately awakened by several publications,

lications, but especially by some observations upon *Human-milk*, which appeared in the *Transactions* of the Royal *Irish* Academy, for the year 1786*.

Such a subject, while it arrests the speculation of the natural philosopher, will further claim the physician's attention in regard to the influence which the diet of infants must ever have on their health, especially that nourishment which Nature herself hath, in every climate, provided for them, at their birth. For it is only from a due acquaintance with this, that Art is likely to supply the fittest substitute when the natural cannot be procured. Nor can the inquiry be deemed superfluous in a treatise embracing both

* Observations on the Properties commonly attributed to *Human-milk*; on the Changes it undergoes in Digestion, and the Diseases supposed to originate from this Source in Infancy.

the means of prevention and cure of their diseases, nor form an improper Introduction to this volume. And it being Dr. CLARKE's express design to dispute not only some of the supposed constituent parts and properties of *breast-milk*, and especially that of any true curdy principle; but also various ill-effects conceived to be produced by it in sucking infants, with the customary means of relief; it is the more necessary that some notice should be taken of that work. Indeed, the spirit of inquiry manifested in the Essay is truly laudable, and the experiments set on foot are worthy the notice of every practitioner in medicine; not to add, that the establishment of the fact, whatever it may be, is likely to become of general use, though practitioners, it is presumed, will not readily agree with Dr. CLARKE in regard to the extent to which he carries his senti-

ment, any more than in all the inferences he would draw from it.

INDEED, when his Observations fell in my way, I was, from the first, not a little surpris'd at the confidence with which he oppos'd a sentiment almost universally adopted; and I determin'd assiduouſly to investigate the matter for myſelf*. For this, I knew I had opportunities

* DR. RUTTY, indeed, made the like experiments in the year 1762, and Profeſſor YOUNG ſince, though with a leſs decided opinion, from ſimilar reſults: and it is preſumed, that the experiments made in conſequence of the preſent inquiry, have ſet this matter in its true and proper light.

How to account for the difference of Opinion from the ſame experiments, or for their ſeemingly different reſults, conſiſtently with the honour of thoſe who profeſs to have made and reported them, with equal attention and integrity, may be leſs difficult, perhaps, than might be imagined. In regard to the principal point in debate however, I conceive, that ſome gentlemen have taken certain congelations for true ſourd, without putting them to
the

portunities equal to those of Dr. CLARKE, and I pleased myself with the idea of being, at any rate, a certain gainer; as I should, at least, get at a fact which must in the result be favourable to my general pursuits. I must acknowledge, that I was inclined to suspect the Doctor had been mistaken altogether, until repeated experiments, by various means, and under a variety of circumstances convinced me, that there is certainly much less curd in *human-milk* than has been commonly supposed, and that whatever the precise quantity might be, it is not very easily detected by runnets and

the proper test: whilst others, from the like neglect, have overlooked small portions of it, which have been blended with other matters; but especially have too much neglected one obvious, though less common mode of discovering it; or in the few experiments they may have made in that way, have not allowed sufficient time for the curd to form; as will hereafter appear.

acids;

acids; since in far the greater number of experiments made upon *fresh* milk, not the least could be perceived, though in a few, I seemed to be satisfied at the time, that there was a small portion of true curd, as hath been asserted by different writers.

SURPRISED as I, indeed, was at the first result of these experiments, threatening the subversion of an idea, which howsoever unfounded, had been but little suspected; no sooner did the spirit of the fact appear to be established, than my wonder not only ceased, but I conceived there was every reason to imagine that *human-milk* should be very much of the nature Dr. CLARKE had supposed; though he should over-rate the result of his experiments, or his inferences be unfounded; as I have since proved to be the case. It may be suspected, indeed, that a partiality for a mode of practice that myself and
many

many others had long taken up, might naturally render me anxious to support it at any rate, and to accommodate every fact to my prejudices. However this may be, I found that the attempt, in the present instance, required very little pains or application, and terminated in the perfect satisfaction of my own mind; since the like stubborn things (which are met with every day in the treatment of infants) cannot be accounted for but in the way I have all along done; and must evidently demonstrate the existence of an *acid* in the first-passages of infants, of what *nature* soever the food may be on which they are supported. How this attempt was executed is now of very little importance to lay before the reader, since the mode and number of experiments I have since made on *human-milk*, prove to a demonstration the
constant

constant presence of curdy or true cheesy principles, and must therefore totally subvert the principal arguments and inferences of Dr. CLARKE, were they much more specious than they are. I shall therefore enter no further into such arguments wherewith a long experience has furnished me, respecting the tendency to acidity in the first-passages of infants, (which became so necessary upon the supposition of there being *no* curdy principles in human-milk,) than the acknowledged small proportion of true curd may seem to demand; though, (as above hinted) these may be sufficient to prove the point, were there even no curd at all to be discovered in *human-milk*. The smallness of its proportion, however, with the resistance it offers to acids, as justly stated by Dr. CLARKE, is still in my opinion as agreeable to reason, as the

the experiments upon which the sentiment is founded appear to be conclusive.

MANKIND, during infancy, is certainly amongst the most feeble of all animals that are nourished in the like mode by the parent, and is liable to more complaints, especially to disorders of the first-passages. It is reasonable, therefore, to conceive, that his aliment should be of the most easy digestion, light, thin, and very nutritious; at once affording as little labour to the stomach as possible, and easily convertible into chyle, or blood. We accordingly find *human-milk*, though very thin, exceedingly nutritious, owing to the great proportion of the fat or buttery part, and of a saccharine whey, with which it abounds. It is also easier of digestion than most other milks, owing to the smaller quantity
of

of curd it contains*; which, while it is less nutritious than the other parts, is also much more difficultly digested, or converted into chyle. And this I am now persuaded is really the case; *human-milk* certainly contains less curd than most other milks; and the public is much indebted to the researches of Dr. CLARKE, as far as they may have led to the establishment of this fact: but let us be careful that we do not draw as unjust inferences from truth, as have been supposed to arise from error†.

* *Asses-milk* appears to have less curdy principles than any other milk I have analyzed.

† I am sorry to find Dr. CLARKE expressing a suspicion that his opinion may not be readily embraced by other physicians. There are, doubtless, many who are glad to collect facts from any quarter, and to entertain truth in every form; and such will always be open to every well supported inference from them.

FOR

FOR does it follow, that if a theory be somewise erroneous, our practice must necessarily be wrong? I think not; being persuaded that experience, and the closest attention to facts, will confirm the general mode of practice enforced throughout this work, and in some part before recommended by HARRIS and his followers. Let us, however, consider the arguments and inferences alledged by Dr. CLARKE against the hypothesis of a prevailing acidity in infants, and noxious coagulation of the milk*, which writers on their

* By the term coagulation or curdy matters, made use of in this and other places, it is not meant to assert, that the milk always separates into proper curd, it having been granted, that although it certainly does contain true curd, it is not so readily separated by acids as the curd of quadrupeds is; but as human-milk abounds with an oily or buttery part, it is disposed to jelly or coagulate into a pretty firm mass offensive to an infant's

their complaints have uniformly established; and contrary to Dr. CLARKE, conceive to be a principal source of their complaints.

Not that they attribute almost all the diseases and fatality amongst infants to that source *alone*, as Dr. CLARKE has imagined, who does not allow due weight to other co-operative circumstances they mention, considering them merely as predisponent causes; particularly the extreme delicacy of their frame. For it is certainly through this extreme delicacy, that infants sink under complaints, which to adults are commonly little more than inconveniences, and prove in some respects an advantage, by exempting such habits

infant's stomach. And this kind of coagulation also takes place out of the stomach, from an admixture of an acid with human-milk, equally as with cows.

from

from the more dangerous disorders of athletics*.

THE atony, or feebleness, of infants, therefore, whilst it is a predisponent cause, proves likewise an occasion of the severity of their complaints, and of the great fatality attending them; and this fatality arises from disorders of the stomach and alimentary canal: for how very few infants die in the first months, in whom these parts are not, both at *first and last*, the evident seat of the disease; and with what difficulty are many others preserved from similar complaints, especially children brought up by hand?

BUT I proceed to the particulars stated by Dr. CLARKE, who having pursued this important subject at some length, and given his arguments every

* Those who abound with acidity are not subject to inflammatory complaints.

HIPPOCRATES.

due advantage, I beg leave to bespeak the reader's pardon, if in following him through it, I should seem diffuse, if not tautological, in purposely stating diversified views of facts, in order more clearly to exhibit their decided result.

THE first Observation of Dr. CLARKE that I shall notice, regards the fact in question, and upon which he grounds his objections both to the concurrent sentiments and practice of writers on the diseases of infants.

“ Women's milk (says Dr. CLARKE) in an healthy state, contains no coagulable, mucilaginous, or cheesy principles, or that it contains so very little as not to admit of sensible proof.”

COAGULATING principles, unless that term be used in a very precise and limited sense, every nurse must have frequently observed, at least in their effects; since large flakes frequently
appear

appear in the matters thrown up from the stomach of unhealthy infants. Whether these congelations be owing to some small portions of curd, or cheesy principle which the milk certainly contains, (which may possibly be too small to account for their frequency and quantity;) or to an oil, fat, or butter, is not of importance to the fact. For *human-milk* certainly contains a much larger proportion of cream, or fat, than cow's milk does, as is evident both from the natural, as well as an artificial separation of it by different kinds of acids. And perhaps this, as I shall have occasion to remark, might serve to account for the symptoms of acidity, and the rancid and acid matter so prevalent in infants, and for the various effects of absorbent, alkaline, and lightly cordial remedies, without a reference to any *true curdy principles* in *human-milk*; which it is
b 2 presumed,

presumed, however, Dr. CLARKE in this place precisely intends.

I PROCEED, therefore, to observe, that the assertion of Dr. CLARKE as to this great point in question, is, in no view, strictly just; since it is insisted, that there certainly is a portion of true curd in human-milk; which as Dr. YOUNG has remarked, separates spontaneously. Dr. CLARKE in his remark upon this observation, I know not why, concludes that it is stated by Dr. YOUNG merely as "matter of opinion, and not the result of any experiment." Nothing further, however, is necessary than *to make it*, and to wait a sufficient time for the result; no particular degree of heat being necessary, though so stated by Dr. YOUNG. But whence it is, that runnets, acids, and spirits do not always separate any very sensible quantity of this curd in the course of eight and forty hours, as they constantly

stantly do from cow's-milk; and wherefore a much longer time seems to be necessary for its spontaneous separation, I am not chymist enough to offer any opinion, and therefore confine myself to the fact: observing, however, that this peculiarity is, doubtless, to answer some wise purpose, and very probably, may be a principal reason of women's-milk agreeing so much better with infants, than the milk of every other animal; and it is hoped, may in time furnish some very useful practical observations.

DR. CLARKE'S next Observation relates to the time, in which human-milk becomes sour: upon which he remarks thus.

“ If we find *human-milk* out of the body so very slow in running into an acrescent state, does it not afford strong presumptive evidence, that the milk of nurses cannot be so very prone to run

b. 3

into

into acidity in the stomach of infants as authors endeavour to persuade us?"

To this it may be replied, that though human-milk, out of the body, does not, indeed, run into an acedcent state so soon as cows milk does, (and for the establishment of this fact we are much indebted to Dr. CLARKE;) yet I think, that *Experience*, (which must be allowed to be full as good evidence as any *Experiments* can be) as fully demonstrates, that like many other milks, and most vegetables, it is much more disposed to occasion acidity in the stomach, than food prepared from pure animal juices. Moreover, it is not usually so slow in acquiring an evident acidity, even out of the body, as might be conceived from some experiments Dr. CLARKE has industriously made, and I doubt not as fairly reported; for at the end of four days, and even sooner, I have sometimes met

met with it full as sour to the taste as cows milk, kept the same length of time, though this is not usually the case*; and when become putrid (by that test) which I have known it to be in ten days, it has been equally so with cows-milk†. And surely it is not imagined, that human, or any other milk, remains on the stomach long

* Dr. CLARKE also takes notice of a variety in this respect.

† It is worthy of remark, that so far from *human-milk* being *usually* indisposed to be much changed by long keeping, as Dr. CLARKE has observed, it has not only always become putrid before I have thrown it away; but that about three quarters of a pint which I kept at the hospital, only a fortnight, for the purpose of collecting the curd by a spontaneous separation, had rendered the room, for more than a week, sensibly offensive to every one who entered it; but was so very fetid when I strained it off, that the matron who assisted me, being less accustomed to putrid effluvia than I have been, was disgusted by it exceedingly.

enough to become acid from that spontaneous separation of parts which takes place in the dairy; and therefore the question is not so much, in what *time* it will become acid, as to what *degree*, or by what *means*, this change may be effected: and in these respects, it is found to differ little from the milk of quadrupeds. For though runnets and acids do not always separate true curd in any sensible quantity from breast-milk, *out* of the body; yet such curd being found in the pukings of sucking infants when most vexed with acidity, seems to demonstrate the *means* of its separation, as well as the *fact* and *degree*.

DR. CLARKE, indeed, speaks of human-milk kept in a phial for more than two years, at the end of which time it was only become moderately acid; whereas I have often found it
very

very four, according to his own criteria with stained paper, in four or five days; so that one would be led to suspect, that like putrid waters, the milk must have depurated itself by some kind of fermentation. And though it was rather ludicrously that this idea first occurred to my mind, I have been since disposed to think, that both human and other milks, when preserved from the air, are capable of such changes; having observed both women's and cows milk, at the end of many weeks, become entirely without taste or odour*. The latter kept on my

* In further vindication of the above sentiments, the author may, at least, offer the following statement; for the accuracy of which the reader's implicit credit is requested. It respects several portions of *human* and *cows* milk, with observations on their changes taken precisely as dated below.

On

my mantle-piece, over a large fire, has not been fetid at the end of five days, and

On one portion, preserved in a phial, and well corked, it is noted—

Human-milk, procured, Nov. 22, 1790.

Nov. 25, Now, rather tart to the *taste*.

26, very sour.

27, not fetid to the *taste*.

28, *smells* very fetid.

29, fetid *taste*.

1791, Jan. 1, *very* fetid, now.

I examined this milk in March 1795, (not having noticed it before for near a twelvemonth;) and found it turned of a dirty brown colour, and *smelling* exceedingly *fetid*.

Another portion of *human* milk, procured within a few days of the above-mentioned, and preserved in a phial, no better corked, did not at this time *smell* at all *fetid*, nor disagreeably *acid*, although it had so *smelt* and *tasted*, a long time before; was not changed in its colour like the former, but seemed merely to have undergone the natural separation into curd and whey.

(While this work was in the press, I carefully examined these two portions of milk (Nov. the 11th, 1797;)

and was by no means more offensively acid to the taste, than I have known human-milk become in four days. And it is further worthy of remark, that out of several parcels of human-milk, preserved under precisely similar circumstances, some became very sour and

1797;) and found them in no wise changed since the examination of them in March 1795.)

A portion of *cow's* milk drawn a month after the first-mentioned, I found at this time (March 1795) changed exactly in like manner in its colour, and decidedly more offensively *fetid* in *smell*.

(This portion on the 11th Nov. 1797, was still most decidedly more offensively *fetid* in *smell* than the *human* milk.)

Human-milk drawn a few days after the *cow's*, was at the same time found preserving its colour, having only separated into curd and whey, and without the least *acid*, or *putrid smell*, and having no more acid *taste* than *cow's-milk* drawn in summer usually has on the second day; nor was there any noise nor fermentation to be perceived from hastily drawing out the cork, as there was from both the *human* and *cow's* milks which had changed their colour.

(On Nov. 11th 1797, this portion also continued in the state above described.)

even

even putrid to the taste, several days before the others seemed to be at all changed. And as this variety occurred under repeated experiments, it may assist in accounting both for the frequency of bowel complaints in some sucking infants which other children are free from, and for the frequent good or bad effects of a change of milk, whether occasional or more permanent: and has not every physician of experience seen infants frequently thrown into tormina, or severe gripings, immediately after coming from the breast of an unhealthy mother, or one who has but little milk?

IN regard to the means by which this acefcency may be produced, we know very well, how very small a portion of the prepared calf's stomach is requisite for making sufficient runnet to separate the curd from a large quantity of milk, and communicate
acefcency

acescency to the whey ; and is it at all improbable, that the infantile gastric (or stomach) juices, assisted by the natural action of the stomach, by surrounding and mixing with the milk in every point, may operate much more powerfully upon it, and dispose it to become so sour and curdy*, as to offend that organ, if it should not soon pass into the intestines†; as it is presumed it ought

* It is elsewhere observed, that the separation of the curd from the whey is the natural process of digestion.

† In proof of the powerful operation of the gastric juices, while in the stomach, I may here advert to the well-known fact of that part being frequently found corroded a few hours after death, (as I have myself seen it;) and I imagine, it is generally, though not universally, believed in this day, that the corrosion has taken place subsequent thereto, and that the gastric juices have only acted upon that part, as they would upon any other animal substance divested of the vital principle.

always

always to do. Moreover, acidity seems to be one of the states into which all animal and vegetable substances naturally, or very frequently run*, in the course of digestion or fermentation, equally constantly with that putridity or fœtor which precedes their dissolution, or separation into first principles; and therefore in a certain degree, probably ought to take place in the stomach or small intestines, as the fœtor does in the lower bowels. The latter is never so great in infants as it is in older subjects, though adults should for a time live only on a vege-

* Perhaps this may not be the proper and natural course of digestion, as Dr. GEORGE FORDYCE has taken great pains to demonstrate; yet are the first-passages in most people so disposed at times, that through indigestion, acid matters are very commonly formed. And it is worthy of remark, that the late Mr. JOHN HUNTER always found the gastric juices lightly acid in every healthy animal that he examined.

table or milk diet. A principal reason, probably, is, that the bile is weaker in infants; but being at the same time a less powerful corrector of acidity, it is likely, they may be, on that account, more disposed to the latter; and, perhaps, ought to be. Nor can I see, wherefore that very probable evidence of an abundant acidity in the first-passages of infants, arising from the very sour smell, and curdy appearance of both the vomitings and stools of many infants, and the *uniform relief* afforded them by a proper use of *absorbent* and *alkaline remedies*, should not have much more weight in the argument, than can be brought against it from experiments made on human-milk, out of the body, and its acknowledged indisposedness to turn sour so soon as cows-milk: for we know, with what extreme caution we ought to apply both
chemical

chemical and phyfiological experiments to the explanation of the phenomena of difeafes. Not to infift again in this place upon the idea already fuggelted, that breast-milk is not fupposed to remain long enough on the ftomach to feparate into curd fpontaneoufly, in the manner of cows-milk kept in a dairy ; it is fufficient to advert to facts, both the fmell and curdy appearance mentioned above, and the relief afforded by medicine, being exactly alike in all indisposed sucking-infants, as in children who are brought up by hand, although the latter are, indeed, more frequently afflicted with fuch bowel complaints. The great difficulty alfo of adapting food to infants brought up by hand, and the frequent recurrence of all the ordinary fymptoms of indigeftion, with the relief frequently afforded them by broths, may ferve to ftrengthen the
idea.

idea of a disposition in the first-passages to generate wind and acidity in the digestion of their food, and to coagulate every kind of aliment capable of coagulation by the stomach juices, especially if not in their most natural or healthy state.

BUT as so much of Dr. CLARKE'S argument turns upon there being very little or no *curd* in human-milk, it may be asked, is it, indeed, a certain fact, that the flaky matters brought off the stomach of infants nourished by cows-milk, is usually *proper curd*, any more than that ejected by children nourished at the breast? for it is possible it may be the fat, or buttery part, or only a very small portion of proper curd, in the one case as well as the other: and if so, the whole force of the Doctor's arguments, and his consequent objections to the popular plan of treatment may, possibly, fall to the ground; for

chemical and physiological experiments to the explanation of the phenomena of diseases. Not to insist again in this place upon the idea already suggested, that breast-milk is not supposed to remain long enough on the stomach to separate into curd spontaneously, in the manner of cows-milk kept in a dairy; it is sufficient to advert to facts, both the smell and curdy appearance mentioned above, and the relief afforded by medicine, being exactly alike in all indisposed sucking-infants, as in children who are brought up by hand, although the latter are, indeed, more frequently afflicted with such bowel complaints. The great difficulty also of adapting food to infants brought up by hand, and the frequent recurrence of all the ordinary symptoms of indigestion, with the relief frequently afforded them by broths, may serve to strengthen the idea.

idea of a disposition in the first-passages to generate wind and acidity in the digestion of their food, and to coagulate every kind of aliment capable of coagulation by the stomach juices, especially if not in their most natural or healthy state.

BUT as so much of Dr. CLARKE'S argument turns upon there being very little or no *curd* in human-milk, it may be asked, is it, indeed, a certain fact, that the flaky matters brought off the stomach of infants nourished by cows-milk, is usually *proper curd*, any more than that ejected by children nourished at the breast? for it is possible it may be the fat, or buttery part, or only a very small portion of proper curd, in the one case as well as the other: and if so, the whole force of the Doctor's arguments, and his consequent objections to the popular plan of treatment may, possibly, fall to the ground; for

the symptoms, complaints and remedies, in both cases, it has been said, are the same, and are well accounted for by a supposed prevalent acidity in the first-passages, and a proneness of their contents to be, in some sort, curdled by it*. Of the former I have incontestable proofs in several instances, in the pukings of infants nourished only by breast-milk, which changed blue-paper red, upon being applied to it the moment they were brought off the stomach.

FOR the like certain detection of true curd, I endeavoured for some time together to make experiments at the

* That the acid of the stomach is capable of forming *proper curd* I have no doubt, having noticed it frequently, and, indeed, having now by me, preserved in spirits, a portion of above an inch in length, and half an inch in thickness, which was many years ago puked up by an infant I was attending; but whether the child was brought up by hand, or not, I do not now at all recollect.

hospital,

hospital, upon the pukings of infants nourished only at the breast; but either the nurses there did not attend sufficiently to it, or the quantity they could preserve was always too small, or too much blended with other matters to ascertain, with precision, whether they contained any true curd or not. But since that time an opportunity presented in private practice, in an infant who I was well assured was nourished only by the breast. Having sucked very plentifully, the child became sick, and throwing up a mouthful of strong curd, I took up a lump of it, about the size of a nutmeg, which adhered together firmly, and was pretty free from other matters; leaving behind in the basin a larger quantity divided into small portions, and too much entangled with a viscid phlegm to answer my purpose. The

portion I took out, together with some slimy matter adhering to it, weighed twenty grains; and when separated from every thing that could be squeezed from it, or evaporated by heat, exhibited one grain of hard, caseous matter; which exposed to the flame of a candle, burned, and smelt like coarse cheese; but being before divested of all its oil or butter, was incapable of being melted. And according to similar experiments made upon human-curd, dried in different degrees, I imagine that the above mentioned portion, previous to its being reduced to the consistence of hard cheese, might contain six or eight grains of soft curd.

I THINK this may be considered as a decisive proof, that the gastric (or stomach) juice can separate curd from breast-milk in the stomach of infants,
and

and I believe is no uncommon thing*; nor was it long before I met with another instance equally satisfactory. This infant at eight months old was attacked

* By this I mean, as I have elsewhere remarked, that in the ordinary course of digestion, the thicker parts are always separated from the whey; but as breast-milk abounds with oil or butter, the viscid matters thrown up often appear more like clotted-cream than true curd: nevertheless, either from the milk remaining for an undue time in the stomach; or from an excess of acidity; or perhaps other circumstances concerned in digestion not always known to us, the separation of the component parts sometimes becomes more complete, and true curd appears. How far this may be owing to infants being in an ill-state of health, to fever in particular; or simply to weak digestive powers, and a depraved state of the gastric, or digestive juice, time and attention to their complaints may possibly discover: but at present I am inclined to think, that the gastric juices, (which are at all times lightly acid,) always possess this property, as they certainly do of separating the curdy part of *cows* milk, if it happen to stay a sufficient time on the stomach. This we also know to be the case with many adults.

with severe cough and feverish symptoms, which were at that time epidemic among children; and several times threw up curdy matters soon after taking the breast, which was its only nourishment. The nurse twice preserved the cloth upon which they had been received, from which I scraped them, and after properly pressing and drying them, I found, that about the one third part turned out to be pure caseous matter, burning in a candle, and insoluble like the former; and in this hard and dry form, weighed a grain and a half*.

Now, if by the above, and other arguments and facts, it should appear,

* My reason for evaporating the curdy matter so compleatly, by exposure to a strong heat, was to demonstrate beyond all ground of doubt, that it contained *true curd*, by bringing it to the state of the coarsest sort of cheese, in which there is little, or no oil or butter.

that

that human-milk, from whatever cause, does actually become sour and curdy, in different ways, and that infants are frequently injured by it; the less disposed thereto it may naturally be, the more we may, indeed, be led to admire the wisdom of Providence, that Women's milk should, in that respect, differ from the milk of many other animals; yet mere presumptive evidence against its frequently turning sour, in the stomach of infants, cannot invalidate the fact.

DR. CLARKE himself, indeed, seems to be aware that there may be reasons for such a supposition, and therefore says,

“ IN the adult state, we know that there are few morbid causes less noxious to the human body than acidity, and few more subject to the controul of medicine.”

THIS position, though in a certain sense, a very fair one, is not wholly so, when taken with all the inferences which Dr. CLARKE would deduce from it: for if the acidity be very great, and the cause permanent, (as is sometimes the case) though alkalis* may be administered in sufficient quantity to neutralize the acid, the acidity returns again, and prevails even for years, in spite of the use of every kind of alkali, of columba-root, bark, steel and other tonics, unless the state of the stomach be changed by them, and the digestive powers strengthened. Indigestion naturally produces acidity, and is increased by it, as we see in many pregnant women, and in various affections of the stomach, particularly

* Medicines of an opposite nature to acids, such as chalk, water of kali, salt of wormwood, prepared natron, &c.

when

when it is diseased in a morbid way.—A gentleman who died of a scirrhus in the stomach, was tormented for the last six months of his life, with an incessant acidity, which though often relieved, especially at the beginning, by magnesia, water of kali, prepared natron, and other similar remedies, was never for one hour entirely removed; so that he spat up acid matters all the day long, and died after a very tedious illness, perfectly emaciated, though he took a sufficient quantity of food of different kinds.

DR. CLARKE goes on to make further concessions.

“BUT granting (says he) such acidity to prevail in infants, we are in possession of many harmless medicines (called absorbents) capable of neutralizing acids, and thus forming innocent *compounds*.”

WE

WE have, indeed, many *useful* remedies in such cases, but none that will *certainly* remove the complaint, either in infants or adults, until the state of the stomach be rectified, which in infants is often effected by time. For, comparatively light as the evils of a disposition to acidity most certainly are, when it is moderate or transient, it becomes even in adults a source of manifold infirmities, when depending upon some permanent cause, as has been above stated, which cannot fail occasioning an almost daily return of every troublesome symptom. A viscid phlegm also, instead of a harmless compound, often results from the alkaline remedies and natural acid, (conjoined as they may be with other heterogeneous matter) which though insipid, is very indigestible; and at other times, a more offensive acrid matter

matter is formed in the stomach of many adults, and is with great difficulty got rid of where the digestion is weak ; and is continually adding to the complaint. Every practitioner must have met with many such cases ; and from one more immediately under my eye, whereby I was for a long time witness to the effects of an atonic, or tender state of the stomach, I can speak very confidently to this point. This patient was of a spare, and delicate habit, very sober, and remarkably free from almost every complaint, but those immediately arising from a weak stomach. This sensible organ, however, was easily put out of order, especially by vegetables, milk, and similar things disposed to generate wind or acescency in their digestion, and was at such times loaded with acidity ; which though often corrected by alkalis and absorbents, the stomach would,

would, at other times, eject matters in so very acrid a state as would instantly render the * fauces of a deep scarlet hue, produce soreness of the throat, falling of the palate, excessive hoarseness, and some difficulty in swallowing, which would remain for many hours. After long vomiting, a bitter matter would come up, sometimes of a light, at others, of a deep green colour; but rarely yellow, though evidently bilious. Sometimes, upon taking alkalis and absorbents previously to vomiting, the acid would be neutralized, at others, no quantity would render the juices bland; but instead of an acid, a heavy acrid, and most viscid phlegm would be ejected, inflaming or flaying the fauces, in the manner just mentioned, and in this state no kind of medicine had any good effect; though previous to the *acid* matter being

* *The back parts of the mouth.*

changed

changed into this *acid* state, alkalis and absorbents very frequently prevented vomiting; which, however, nothing could do after the contents of the stomach lost their *acidity*, and became *acid*: so far were they from being usually converted into a *harmless compound*. It was only after being many years tormented in this way, and having daily recourse to alkaline and absorbent remedies, to columba and bark, joined with steel, and other powerful tonics, with exercise and a scrupulous attention to his diet, that he was sensible of any abiding amendment; though from the great benefit he at length received, by a strict adherence to such a plan, it may be presumed he had no morbid affection of the stomach, though that had been often suspected.

Excess of acidity, and an acrid, ropy phlegm are, indeed, the well known attendants on an imperfect digestion,

digestion, and will recur in many adults, feed on whatever they may*; though the evil must, doubtless, be increased by certain kinds of aliments; and of that class are those administered to infants. If adults, therefore, of a similar habit to that just now stated, though in the end often restored to perfect health, may continue for a long time greatly tormented, whilst the most powerful correctors of aci-

* I conceive, that this habitual acid affords a too great, and improper stimulus to the glands of the stomach, exciting both a superabundant and morbid secretion. By this means, the stomach, or digestive juice, is oftentimes rendered exceedingly viscid, (in the manner of the secretion from SNEIDER's membrane in the nose, from the stimulus of a cold) or afterwards becomes thus tenacious from mixing with the acid, and ill-digested contents of the stomach. This seems probable, from the vast quantities of this viscid and acrid matter which, it has been observed, people long vexed with acidity will sometimes throw off the stomach for hours together, and frequently for several successive days.

dity,

dity, and known tonic, or bracing remedies, are had recourse to; and if improper food be occasionally received into the stomach, their complaints will at such times be greatly exasperated; wherefore should it be supposed, that delicate infants must always be restored, if the breast-milk, as well as other nutriments on which they may feed, be confessedly, to a certain degree, disposed to add to the complaint? And can it be urged from any experiments made on human-milk, or will Dr. CLARKE or others affirm, that it is so utterly unlike every other milk, and even so much more ant-acid than animal food, that it has nothing in it likely to become sour (save in very weakly children) by an admixture with the stomach juice?

I now proceed to Dr. CLARKE's remarks respecting the green colour
sometimes

sometimes observed in infants stools. Dr. CLARKE doubts of the existence of the supposed predominant acid, of which that colour has been imagined to afford some evidence, because, he says, common acids do not give that tinge to the bile, and that only mineral acids give it a green colour.

BUT as *some* kinds of acids can produce this effect, it cannot surely be proved, that the natural acid of the stomach and bowels cannot effect the like; especially when it is considered, that in adult persons affected with dyspepsia, or a bad digestion, *bitter* matters of a *green* colour are frequently ejected after very acid vomitings, as it has just now been remarked. And although as Dr. CLARKE observes in a quotation from SYDENHAM, "porraceous matters are ejected by children who have been over-purged or vomited, and by healthy adult persons
when

when 'sea-sick,' yet the like appearances under such circumstances can scarcely destroy the conclusion; since all such violent agitations of the first-passages, by disordering and perverting their due and natural action, upon which the healthy state of their secretions indubitably depends, may sufficiently account for the sudden forming of acid, acrid, or any other unnatural and unhealthy stomach juice, as well as for the vomiting up of bile, which in its passage will certainly be mixed with it, and be somewise changed from its natural colour. And, indeed, SYDENHAM's reasoning upon this subject, a little further on, is of a similar kind, though expressing himself in the language of that day, he attributes this foreign, or morbid secretion, to a confusion of the animal spirits; which, indeed, for any thing I know, may be a remote cause of it. It should like-

wife be considered, that it is during the time that infants appear to be affected by a predominant acid in the first-passages, that the dejections or vomitings are of a green colour. Upon the whole, therefore, the prevalently sour smell of some infants stools, which Dr. CLARKE thinks so very nugatory an argument, seems to afford much better evidence of the presence of an acid, than his arguments can be against the change of colour by such a mean. Moreover, I may affirm, that the *green* stools of sucking infants, and even some stools that are of a bright *yellow* colour, do certainly contain an acid, having detected it under repeated experiments made with blue paper, the instant the stools have come away*; however it might turn out in experi-

* These experiments were made before witnesses at the *British Lying-in* hospital.

ments made by Dr. CLARKE. And I may therefore, possibly, be allowed in my turn, to express some surprise at the confident manner in which Dr. CLARKE has taken upon him to dispute the fact.

BUT Dr. CLARKE observes further, that, "Those writers who have laid the greatest stress on such appearances in infancy, do not pretend to apply the information to be derived from thence to the treatment of the diseases of adults."

I, PROBABLY, do not fully comprehend the import of this observation; for the information is most certainly applicable, and the complaints of each arising from acidity are capable of cure or relief, in the same way, viz. by alkalies, bitters, and aromatics, with a well adjusted diet. I have intimated, that the doctrine is *partially* applicable, be-

cause the bile of adults being more exalted and acrid, or otherwise stronger, (if I may so speak) may not upon meeting with the like acid, change their stools just to the same colour of those of infants; nevertheless, the stools of adult persons, tormented with acidity, especially under peculiar aggravations, are of a much *paler* colour, than those of people of much stronger digestive powers, and possibly, through a deficiency of bile. And here it may not be improper to consider the very material circumstance of the very different diet to which adults are addicted, as well as the medicines they may take, which, it is well known, often affect the colour and smell both of the stools and urine in the course of a few hours, as the stools of infants (though ever so green before) are changed in their colour upon taking
rhubarb,

rhubarb, saffron, and similar medicines*; while the diet of infants being perfectly simple, the contents of the bowels are likely to acquire no other colour than that of the bile itself, (as is actually the case in a healthy child) or such as through their accidental property may be chemically induced by the admixture. Not to add, that the urine in healthy adults is usually of a much deeper colour than that of infants, and is also not unfrequently occasioned by a certain diet as well as by medicines; and varies with them. And perhaps it may be from a similar natural tendency to a very *dark* colour, that we find the first stools of newborn infants are not truly green, though often of a *greenish-black*; nevertheless,

* Spinnage and other things impart their colour to the stools of young children, in a way they do not to healthy adults; and perhaps from their digestive powers being weaker.

there is sufficient acidity in their gastric juices to occasion the stools voided previous to infants taking any kind of food, to tinge blue paper red, (as I have found by careful experiments) though such stools contain a very large proportion of bile.

THESE observations, it is imagined, may apply to Dr. CLARKE's remarks in regard to the colour of the stools of adult persons, vexed with acidity; which he says are not of a green colour like those of infants. And in respect to ejections from the stomach, when so tinged, it seems to have been a constant remark, that bile lodged there has been diluted by an acid; to both of which, physicians are in the habit of administering their appropriate remedies.

DOCTOR CLARKE goes on to say,

“ UPON the whole, I hope it will appear probable to the generality of readers,

readers, that predominant acidity in the first-passages, is by no means so general, as to be considered as the only, or even principal source of infantile disorders; that such a morbid cause may now and then occur in infancy, as in adult age, from a weakness of the stomach, costiveness, or improper food, can admit of no doubt."

THIS inference is surely far from being made out from all that has been advanced.—But let us consider of what the arguments consist. "Human-milk out of the body, does not turn acid so soon as cows-milk does," (but cows-milk requires twenty-four hours or more;) "nor the common acids curdling the milk of quadrupeds produce scarce any sensible curd from human-milk; that only mineral acids will tinge the bile of a green colour; and that in the adult state few morbid causes are less noxious than acidity, or

more under the controul of medicine.” To conclude from hence, that acidity in the first-passages ought, not to be considered as so general a cause of infantile complaints, or to be of such dangerous consequence as it may usually have been imagined, does not appear to me to be perfectly founded; much less sufficient to subvert the arguments and evidence adduced in support of that sentiment, in connexion with the acknowledged imbecility of infants. The school-maxim, indeed, is true, that *from nothing, nothing can come*.—If there be no curdy principles in human-milk, no species of acid in the stomach can bring curd out of it; yet may the combination of an acid and milk offend the stomach otherwise. It has been observed, that all common vegetables, and even bread, are often very imperfectly digested by adult persons with a stomach
over-

overcharged with acidity, yet is no part of such aliment necessarily converted into any thing like *true curd*; though the stomach in all such persons is as certainly offended by the *curdling* of cows-milk.

NEVERTHELESS, I have hinted long ago*, that mere acidity may not, in the first instance, or in a general way, be necessarily so injurious as some writers have contended, and that infants suffer more severely from an acrid matter, (less capable of correction by absorbents, than by aromatics,) which though it originates from a predominant acid, generally becomes so very offensive in conjunction with some other cause, be that a peculiar weakness, or otherwise; robust children being always far less disordered, though

* In the first outlines of the subsequent Tract, in the year 1784.

not free from some of the less hurtful symptoms of acidity. Upon the whole, however, I am persuaded, that acidity is eventually a frequent source of mischief, because it is so constant a consequence, and further aggravation, of indigestion, in such adults as have what is called a weak stomach. For it is, perhaps, only in adults of a lax fibre, approaching to the feebleness of infancy, and not in athletics, that we meet with that morbid source which Dr. CLARKE observes sometimes occurs in adult persons. And if the stomach or digestion of infants be naturally weak, why should we not expect to find them peculiarly liable to acidity and its consequences? the state of the stomach being certainly the grand source of general good, or bad health, at every age. And, indeed, were I to say no more than that infants, in proportion to the greater weakness

weakness of their digestion, must be more disposed to acidity than adults, (with many of whom a vegetable, or milk diet *always* disagrees,) it were saying a great deal towards subverting the whole that has been advanced by Dr. CLARKE against its prevalency, in connexion with the general debility of all young infants, being a principal source of their complaints.

DR. CLARKE concludes by observing, that "the young of all the ruminant animals, fed on milk of a much more acescent nature, suffer no inconvenience from this source." To such laconic arguments, I think it might be fairly replied, that many ruminant animals can eat, and digest, *bones*; and hop about likewise when their own bones are broken or dislocated, without manifest injury, or much expression of pain, and in this view I might adduce the remark, made elsewhere, on the
rank

rank which animals severally hold in the scale of beings: it being very evident, that besides the ground of comparative health and disease arising from the bulk and strength of various animals, there is that of their several ranks in that scale, commencing with man, the head, and extending from the invaluable sheep, the cow, or the horse, to the lowest of our domestic animals, and to reptiles; the more noble and useful (from whatever cause) being, I believe, uniformly subject to the most, and severest disorders. Thus the fragile worm daily survives some kinds of injuries, which the sturdy ox could not; while the delicate infant would sink under that, which the lamb could with safety endure.—But what should we learn, on the present occasion, by pursuing such comparisons? “Man (said one) is not a fly”—no, nor yet a tyger.—Such arguments, at the

the best, are very equivocal, and one might be set against another without end. We do not, for instance, suspect that quadrupeds in a state of pregnancy, are afflicted with acidity or heart-burn any more than their young are from the curdy principles of the milk by which they are nourished; but we are certain, that many breeding women are tormented with such complaints for a great length of time, feed on whatever they may. It is confessed also, that the milk of quadrupeds abounds with cheesy principles, and that human-milk contains a far less proportion; (or according to our author, none :) Here then is a glaring disparity in the very point at issue; and from which the inference drawn by Dr. CLARKE, (were even his experiments conclusive) does not seem more natural than the observation already advanced

advanced on the wisdom of Providence in abating of that quality in human-milk, because a greater propensity to acidity, or excess of cheesy principle, must, from the atony of infants, render such a quality peculiarly noxious to them.

It has been observed, however, that I can myself no longer entertain any doubt of the *existence* of this principle in breast-milk, though it may vary in its quantity and consistence; nor hesitate to insist, that the result of my experiments on human-milk, and infantile green-stools, (which it has been said, *do stain* blue paper, red) completely overturns all that Dr. CLARKE has advanced, to the entire satisfaction of my own mind: but as our contradictory assertions, (as to facts) cannot satisfy those who have not made the like experiments, I have submitted the

the matter in a way of fair argument, and appeal to the discernment of the well-informed reader.

SINCE these observations on Dr. CLARKE'S Essay were drawn up, I have, however, been able to adduce a testimony which I conceive will not generally be disputed. Had I met with it sooner, it would, probably, have saved me a great deal of trouble; but the *Histoire et Mémoires de la Société Royale de Médecine*, année 1790, might not perhaps have fallen in my way to this day, if my good friend DR. ANDRÏ of Paris had not made me a present of it; though long after I had completed my experiments on human-milk. It were needless in this place to quote, in detail, the experiments there recorded; it must be sufficient to give tables of their result*, and to say that they cor-

* See the annexed Table.

respond

respond exactly with my own; referring to the volume itself for an ample account of the modes of investigation, further properties, and component parts of various milks there specified, demonstrated by numberless experiments, and upon multiplied authorities.

To sum up the whole, then, upon Dr. CLARKE's own principles, and forbearing for the present to insist either upon my own experiments, or others, it may be fairly urged, that, in disorders of the first-passages, the matters ejected both by vomiting and stools are frequently flaky, coagulated, or curdy; that they have a sensibly sour smell; and that the stools are often of a green colour, very numerous, and attended with griping pains. That these symptoms and complaints are removed by such remedies as are allowed to correct acidity in other instances, or
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are mitigated in a greater or less degree, as long as such medicines remain in, and are acting on the stomach and bowels, and mixing with their contents. That, moreover, every kind of aliment which during its digestion is alike peculiarly disposed to produce acidity, both in the adult and infant states, always increases the above symptoms; breast-milk, however, (from a healthy nurse) the peculiar food of infants, being less commonly found hurtful to them, because more thin, and lighter on the stomach than most other food, and having less of that true curd found in most other milks. But whenever human-milk happens to disagree, the symptoms are exactly the same as in infants brought up by hand; though in other instances, a recourse to it (or even asses-milk) frequently proves a remedy, for children whose bowels have been disordered from being previously

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viouſly nourished by the ſpoon. And though this fact may, indeed, fairly prove it to be far leſs diſpoſed to turn curdy and acid than cows milk, and farinaceous ſubſtances; yet the circumſtance of ſucking children being often afflicted in precisely the ſame manner, and relieved by the ſame medicines with children brought up by hand, equally demonſtrates the cauſe of their complaints to be exactly ſimilar; and that human-milk, when mixed with the ſtomach juice, is diſpoſed to turn acid, and its component parts to ſeparate improperly, or, perhaps, too haſtily, as in adults whoſe digeſtion is bad. And that on theſe accounts, the milk becomes curdy, occaſioning indigeſtion and wind, which jointly irritate the nervous coat of the ſtomach and bowels, and produce complaints that endanger the infant's life, unleſs remedied by the known correctors of acidity.

acidity. Nor are these effects, by any means, rare occurrences, or confined to tender and delicate infants, as Dr. CLARKE would insinuate: and on this head I may venture to appeal to his own, and every man's experience, as well as to the mortality in the *Dublin Lying-in hospital**. It may be added, that a disposition to these complaints often continues as long as infants remain at the breast, or live on any other milk diet, but are diminished as soon as they take freely of animal food; and that this change does not depend merely on their more advanced age, but on the alteration of diet, is pretty evident from the like advantages being often obtained by allowing them a little broth, once or more every day, at a much earlier age.

* See the *Note* at the close of this *Introduction*.

SUCH then are the facts in regard to diet, the discharges from the bowels, and complaints of the first-passages during infancy; and such are the effects of certain medicines known to correct or abate acidity; and to what shall they be attributed, or what can be more naturally inferred from these premises, than that there certainly is an acescent tendency in the gastric, or digestive juices of infants, (useful, no doubt, upon the whole,) and a quality in *every kind* of milk disposing it to be curdled or coagulated, and become acrid by the admixture? To these observations might be added that of infants being so very rarely attacked with fever, however severe or continued their pains, or other complaints may be; and though many good reasons might, doubtless, be given for this exemption, yet none
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can exclude, the well known aphorism of the father of physic, before quoted, nor be more appropriate to the occasion than that maxim, "Those who have an acid stomach are not disposed to fever."

I HAVE no desire to enter into a formal dispute with any man, much less to contend for mere opinions irrelative to practical truth; but should any persons be determined to dispute both the inferences and facts I have advanced, let them, at least, tell us *what* it is that so uniformly acts as an acid might be expected to do, curdling or thickening the contents of the stomach, offending the bowels, producing green and sour-smelling stools, with other symptoms of indigestion recurring so uniformly in delicate infants: effects which nothing could ever be contrived totally to prevent, nor can any thing so uniformly relieve

as *ant-acids* or absorbents. May it not justly be presumed to be something not easily distinguished from what we term an *acid* in atonic adults? How much less injurious, however, this disposition may be, than that tendency to putrescency prevailing in the latter, induced by a very different diet, and a more exalted bile necessary to digest it, may be fairly presumed; and upon which, it has been noticed, I have already given my own sentiments at large, even in my first tract on children's diseases. It may, however, be just remarked in this place, that it might, possibly, be fairly urged, that infants must, therefore, either be exempt from their share of the infirmities of human nature, (hereditary evils, from scrofula, &c. excepted) or be peculiarly liable to disorders arising from acidity in the first-passages, which are confessedly amongst
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the slightest evils, and at the same time a probable occasion of their escaping those of a more dangerous tendency.

I CONCLUDE, therefore, with observing, that indebted as the Public is, and particularly gratified as I am, by the pains and researches of Dr. CLARKE, I cannot but insist, that his inductions are neither properly made out by experiments, nor supported by the arguments he has advanced: nor is it, perhaps, perfectly certain what essential difference there may be between every possible combination with human-milk out of the body, and its natural mixture with the digestive juice in the stomach of an infant. What changes the temperature and action of that bowel, whether mechanical, or chymical, may be capable of producing, cannot for certain, be either

proved or disproved from mere speculation ; so that whatever opinion we may form, must remain very problematical, any further than matter of fact may discover their operation, in the different stages of digestion, both in atonic and athletic subjects. But in fine, whether under all, or any particular circumstances, any of the secretions be precisely what chemists would term an acid ; or whether the offensive matters, under an imperfect digestion, be usually of the nature of curd, butter, or phlegm ; or whatever theory Dr. CLARKE, or others, may from his researches be justified in advancing, at some future period, cannot weaken the force of any fair inference from facts. The author of this work, indeed, ardently wishes, that a practical improvement may be made of every discovery ; but whatever

ever the improvements may be, it does not seem likely from the above impartial statements, that the treatment of *infantile* disorders recommended by him, and in many particulars very generally adopted for the last half century, will undergo any essential alteration*.

* Dr. CLARKE concludes with expressing a hope, that a system of practice more rational than the present may be struck out.—What has been the precise mode of practice, or its success in *Ireland*, I can guess only from Dr. CLARKE's statement in regard to the *Dublin Lying-in Hospital*; where, passing by those years in which an epidemic is said to have raged amongst the children, the number of deaths has ever been far beyond the average in the *British Lying-in Hospital*, in *London*, where the old plan of treatment is pursued.

IN support of this assertion I submit the following statement of the two hospitals, (and it is presumed, not an unfair one,) being copied from the printed accounts of that in *Dublin*, and from certain outlines drawn up, on another occasion, by Dr. CLARKE himself; and contrasted by corresponding

ponding extracts from the *British Lying-in Hospital*, subsequent to those quoted by the Doctor*.

AND first, from his own statement, it appears, that in the old *Lying-in Hospital* in Dublin†, (reckoning from its first institution, when, probably, the furniture was new, and there existed no peculiar remote causes of disease) out of 3,746 infants, 241 died *within the month*; that is, between six and seven in every hundred: but that in the *British Lying-in Hospital*, (a very old and ill-contrived edifice) the Doctor reports, (reckoning likewise from its first institution) only 146 died, out of 3,611; which is only as four to the hundred.

AFTER this period the endemic commenced‡, and the fatality greatly increased; the Doctor then remarks, that after proper means were taken to remove the remote causes of that fatal disease, only 419 infants died out of 8,033 births; that is, from five to six in every hundred.

IT appears from the printed accounts of the hospital, that this period is taken from the year 1783 to 1793, inclusive. But, the like accounts of

* For their perfect accuracy, it is not to be expected we should either of us be answerable, as much must depend upon the report of inferior officers; but on my own part, no wilful or known misstatement is offered.

† See Transactions of the *Royal Irish Academy*, anno 1789.

‡ See *Nine-days-disease*, vol. 1. pages 175, 176.

the

the *British Lying-in* hospital, during the very same years, report that, out of 3,374 children born there, only 95 died; which is under three in each hundred.

BUT to render these calculations more immediately applicable to Dr. CLARKE's observations on the treatment of infants, I shall to these six years, add the *Dublin* printed account of the three succeeding ones, thereby increasing the above period to nine. During these years, the number of deaths was, indeed, amazingly decreased, so that the endemic, especially during the three last, seems to have entirely given way; and it being also during this period, that Dr. CLARKE had taken up his new theory both of the nature of *human-milk*, and the early diseases of infants, a comparison of the number of deaths in the two hospitals, and any inference from it, will be brought to a fair issue. It appears then, that from the year 1783 to 1791, 12,688 children were born in the *Dublin Lying-in* hospital, out of which, 593 died; which is, as $4\frac{2}{3}$ in an hundred. But, in the *British Lying-in* hospital, during the same years, 5,223 children being born, only 112 died; which is but little more than two in each hundred. In the last of the above years (as well as during many former ones) only two children died in the *British Lying-in* hospital, out of 627 born there; and in the year before that, no more than five, out of 630, which number also was not exceeded in several

veral preceding years*; and seems to prove almost to demonstration, that the entire management of infants in that hospital, as well as the practice of the present day, must be rational and judicious; and is far from calling for a total subversion of the principles by which they have been always regulated.

I ADD, that in the *British Lying-in hospital*, from the year 1757, (being that in which the hospital in *Dublin* was instituted,) to the year 1791, the average of children's deaths has been *under three* in the hundred†; but that, in the hospital in *Dublin*,

* So that the number of infants dying in the *British Lying-in hospital under three weeks old*, is usually far less than that of *still-born* children, as Dr. CLARKE seems to notice with some surprize, in regard to one of the *London* hospitals he has occasion to mention, but as it, indeed, ought to be every where, at that early period.—If small things may be compared with great, it may be added here, that speaking from memory, I have reason to think, that in my private practice, during the last five years, I have not lost more than three infants under the age of one month; which is much below the average of still-born children, that has fallen to my lot, and of which I have an exact register.

† It appears from the hospital register, that during the last five and twenty years, the average of deaths has been considerably lessened, and also that a smaller proportion of infants has died in the last ten, than at any period since the first institution of the Charity; and it may, perhaps, be fairly conjectured, through improvements made in the management of infants, which was not formerly so fully consigned to Physicians.

during

during the seven *most successful years* it ever experienced, (either previous, or subsequent to the endemic) the average is *above four*; though the mothers, usually, remain there only a fortnight, but those in the *British Lying-in hospital*, three weeks, and sometimes a month.

I HAVE been at the pains of stating this average, in the two hospitals, at different periods, that the reader might be competent to judge of the probable better practice; and may see for himself, that, if the management of new-born infants, or the treatment of their disorders, has been of late anywise influenced in *Dublin*, by Dr. CLARKE's new theory, it has not, hitherto, to say the least of it, any great claim to public attention, on the score of its success.



A comparative ANALYSIS of the Milks of Women, the Cow, Goat, Afs, Sheep, and the Mare, by M. Boyssou of Aurillac in Upper-Auvergny.

<i>Quantity of Milk.</i>	<i>Names of the several Animals.</i>	<i>Their Nourishment, &c.</i>	<i>Ages of the Milks.</i>	<i>Quantity of Butter.</i>	<i>Quantity of Cheesy Matter.</i>	<i>Quantity of Saccharine Salt.</i>	<i>Quantity of Extract.</i>	<i>Produce, or Extract in Bal. Mariæ.</i>
One Mark-pound Weight, (or 8 Ounces.)	Woman's milk.	Inhabitant of a City.	7 months.	4 drams, 48 grains.	1 dram, 48 grains.	6 drams, 48 grains, in 4 cryf-tallifications.	1 dram.	1 ounce, 8 grains.
Ditto.	Cows milk.	Fresh Pasturage.	6 weeks.	3 drams, 45 grains.	5 drams, 51 grains.	4 drams, 40 grains, in 5 cryf-tallifications.	$\frac{1}{2}$ dram.	9 drams, 42 grains.
Ditto.	Goats milk.	Ditto.	3 months.	4 drams, 24 grains.	7 drams, 48 grains.	3 drams, in 4 cryf-tallifications.	$\frac{1}{2}$ dram.	2 ounces, 16 grains.
Ditto.	Asses milk.	Ditto.	2 months.	10 grains.	2 drams, 61 grains.	6 drams, 16 grains, in 6 cryf-tallifications.	1 dram.	7 drams, 12 grains.

Ditto.	Sheep's milk.	Ditto.	3 months.	5 drams, 40 grains.	7 drams, 20 grains.	3 drams, 12 grains, in 4 cryf-tallifications.	$\frac{1}{2}$ dram.	2 ounces, 12 grains.
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Ditto.	Sheep's milk.	Ditto.	3 months.	5 drams, 40 grains.	7 drams, 30 grains.	3 drams, in 4 cryf- tallifations.	$\frac{1}{2}$ dram.	2 ounces, 16 grains.
Ditto.	Mares milk.	Ditto.	2 months.	6 grains.	2 drams, 48 grains.	4 drams, 48 grains, in 5 cryf- tallifations.	2 drams, 36 grains.	7 drams, 12 grains.

A comparative ANALYSIS, by ABRAHAM VAN-STRIPRIAN LUISSIO,
Physician to the Dauphin; and NICOL. BONDT, Physician at Amsterdam.

Scale 100.	Cream.	Butter.	Cheefe.	Sugar.
Cows milk.	4— $\frac{1}{16}$.	2— $\frac{1}{16}$.	8— $\frac{1}{16}$.	3— $\frac{1}{16}$.
Woman's.	8— $\frac{1}{16}$.	3	2— $\frac{1}{16}$.	7— $\frac{5}{16}$.
Goats.	7— $\frac{1}{16}$.	4— $\frac{9}{16}$.	9— $\frac{1}{8}$.	4— $\frac{3}{8}$.
Asses.	2— $\frac{1}{16}$.	—	3— $\frac{5}{16}$.	4— $\frac{1}{2}$.
Sheep's.	11— $\frac{9}{16}$.	5— $\frac{13}{16}$.	15— $\frac{3}{8}$.	4— $\frac{3}{16}$.
Mares.	$\frac{13}{16}$.	—	1— $\frac{1}{2}$.	9— $\frac{1}{16}$.

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DIRECTIONS

FOR THE

General MANAGEMENT of INFANTS

AND

YOUNG CHILDREN.

AMONG the multifarious matter brought forward in the following pages, the Aliment most adapted to Infancy has been said to be one of the first importance. Previously, therefore, to treating of Diet more extensively, and the General Management of Children, I shall enter into a candid discussion of that particular, by considering the case of Infants intended to be reared with-

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B

out

2 *Familiar Directions for the Nursery.*

out the breast, or brought up, as it is termed, by *hand*.

But it would carry me altogether beyond the limits I have assigned to the work, were I to enter so far into the investigation of this subject, as to set forth all the improprieties of that mode of training up infants from the birth. And I am glad to find by some very recent examples among persons of rank, that there is less occasion for it, than there appeared to be some years ago. It would be unpardonable, however, in a work of this sort, not to insist how inadequate every substitute for the breast has been universally found; and therefore how proper it is that every child should have it, and even be suckled by its own mother, where her health can safely admit of it.—Reason, instinct, experience, all conspire to support this opinion; and whoever will determine to attend only to mat-
ters

ters of fact, may soon be convinced of it. Nature herself points it out: all the nobler part of the irrational creation is qualified for it, and by instinct obeys—the human race alone, possessed of nobler powers, and rational discernment, perverts those faculties to evade its dictates, and to invent excuses for refusing its claims. But puerile, indeed, are all the common arguments against it, in the greater number of instances; and herein Dr. ARMSTRONG seems to have egregiously erred, for though, apparently, an advocate for suckling, he has laboured for arguments to apologize for the spoon and the boat, in too many instances.—It were easy, perhaps, to produce as sound arguments against eating more than once a day, because so many people become diseased from excess. On the other hand, a new and very rational argument in favour of breast-

B 2

milk,

4. and unsafe Method of rearing Infants.

milk, has been advanced by a late writer, from the probable consideration of the stomach juices of every animal being the best suited for acting upon its respective milk*.

BUT not only is the breast-milk the only natural†, and most proper food for

* The duty of suckling has the sanction of the most ancient writers, as well as of persons of rank, and is distinctly noticed by PLINY. And one of the Queens of *France*, suckled her own son, and continued it even during a fever. Another lady, VAN SWIETEN tells us, having on some occasion, given the child her breast, the Queen was so much disgusted at it, that she forced her finger into her son's mouth to induce vomiting; unwilling that it should receive any nourishment but from herself.

† In some very northern parts of the world, as those of *Greenland*, and the neighbouring country of the *Esquimaux*, the breast appears to be, in the strictest propriety of speech, the *only* food that nature has provided for infants; insomuch that, whenever a suckling-mother happens to die, her infant is buried with her: experience (one would hope) having demonstrated the inefficacy of the hard and
coarse

Every mother who is in good Health, 5
for infants, (experience demonstrating, no artificial one to be equally easy of digestion, and nutritious); but suckling also conduces to the easy recovery of the mother; though she should not be able wholly to support her child by the breast, nor to continue suckling so long as the infant may require it. But though from much experience I venture to give this opinion, I do, by no means, intend to assert, that every mother is able to suckle her child even for the month, or would do well to attempt it; but I am, nevertheless, equally satisfied, that many are very well able who do not, and that several who have only through fear been discouraged from doing it, in two or three lyings-in, having afterwards been pre-

coarse diet which nature has there so sparingly dealt out, it is esteemed an act of compassion to put an end to an infant's sufferings by plunging it into the sea.

6 *ought to suckle her own children ;*

vailed on to make the attempt, have gone on with it for several months, enjoyed better health when they suckled than at any other part of their lives, and their children have thriven perfectly well. Art and management will likewise afford some assistance, where the natural constitution, alone, may not be fully equal to the task. In this view, besides a suitable diet, air, exercise and a regular manner of living ; I will venture to recommend cold-bathing, especially in the sea, if the season of the year should permit ; and this not only from my own experience but that of a writer before quoted, who asserts, that it is often found particularly useful in restoring the strength, and increasing the milk in nurses of a weak constitution ; adding, that it can never do any harm to a woman merely as a nurse, where no other reason, independent of that circumstance, forbids it.

it being equally advantageous to both. 7

it. The principal caution necessary on this occasion, and for every lady of a delicate habit, being, not to bathe too frequently, that is, not to exceed twice, or at the most, three times a week.

THUS, besides the advantages derived to infants, it appears there are others resulting to the suckling-mother, and some deserving a further notice. For by this means, where due care is taken, painful inflammations and suppurations in the breast may often be prevented, as may be fairly concluded, not only from the rarity of such complaints in the *British Lying-in Hospital*, where almost every woman suckles her infant, but from the like authority of Dr. NELSON, who reports, that “out of 4,400 women who suckled their children, only four had milk-sores, and that these had either no nipples, or former sore breasts.” It has likewise long been suspected, and of late years

8 *But it will demand some Sacrifice*

more generally imagined, that some of the worst fevers, as well as the painful swelling of the legs, and other more rare ill effects of child-bearing may, generally, be prevented, by suffering the milk to flow duly to the breasts, and be freely drawn from them, though only for the month. These advantages, if duly credited, one should hope, might tend to induce ladies of rank to set a general example, by performing this kindest and most pleasant office, at least during their confinement.* But it would be unjust not to add, that whenever they may purpose to assume

* The present day is peculiarly favourable to Ladies determined upon this laudable attempt, through the admirable discovery of *Mrs. Relf's Nipple-case*, sold at N^o. 12, Bell's Buildings, Salisbury-square, Fleet-street. Though a most simple, it is an efficacious contrivance, at once assisting the infant to draw out the milk without trouble to itself, or pain to the parent, howsoever ill-formed or tender the part may be.

it

if it be done in the manner it ought: 9

it for a much longer time, they should determine to do it effectually, or they will but injure their children, as well as forfeit many of the advantages and comforts, which in a due execution of it, they would have a right to expect.

For a long time, however, writers have successively complained, that, notwithstanding the many encouragements often brought to the ears, and urged upon parents, that tyrant, Fashion, has prevailed over the good sense and natural feelings of many, whose maternal affection can be, in no other instance, suspected. It is with great pleasure, nevertheless, that I have been able to observe as well in a former, as the present publication, that ladies of rank are every year becoming converts to this maternal duty, and are proud of supplying their offspring with that new nourishment, wherewith nature hath purposely

10 *And if not, may be injurious to the child.*

purposely accommodated them.—But in this age of dissipation, there are yet some, against whom a heavier complaint may be brought, who not only refuse to give nourishment to their tender and helpless offspring, but whilst they, unnecessarily, commit this charge to a stranger, give up every other charge with it; and seldom visit the nursery, or superintend those they have set over it. It is from hence, that so many errors in point of diet, air, clothing, &c. &c. have insensibly crept into the houses even of some, whose rank in the world would otherwise secure to their children every advantage that art, and a due attention to nature could point out.

ANOTHER important, and affecting consideration might be brought forward on this head, which I shall, indeed, only touch upon, as it calls rather

There are also Objections to foster-nurses 11

ther for the pen of the moral philosopher than of a physician, I mean, the sacrifice which poor women make in going out to suckle other people's children; the sad consequences of which are often severely felt by their own, through neglect or mismanagement, and especially for want of the breast. Indeed, no attention of the nurse can duly compensate this loss; and only the most common substitutes for it can, in their forlorn circumstances, be allowed them. This becomes a source of evil, that, I fear, is not usually thought of, and proves eventually the sacrifice of many infants every year; a matter of serious importance, indeed, to the public, as well as to the families immediately concerned. It is true, indeed, ladies of rank frequently do all in their power to counteract this too natural, and fatal consequence, by a careful attention to the forsaken infant;

12 *That respect themselves, as well as the child,*

fant; * not only insisting upon a proper breast being provided for it, but regarding it as a kind of foster-child: so that, after generously preserving it through infancy by their charity and attention, they frequently follow it with their protection and kindness through life. Such charity, indeed, adds a lustre to elevated rank; though perhaps, much less than this, from some people, would be short of their duty. But it is not every family that is in a situ-

* It is with peculiar satisfaction that I congratulate the benevolent, in the prospect of the evils hitherto attendant being shortly obviated to a greater degree than could have been expected, by the admirable Institution devised by *Drs. Denman and Croft*; and that it is meeting with all the support that could be wished for, from families of rank. A proper building in a healthy and convenient situation, for the reception of the infants of poor women engaged abroad as wet-nurses, alone retards the immediate execution of this most benevolent design, of which the *QUEEN* has graciously become the *Patroness*.

ation

ation to adopt this conduct; though I am sorry to add, that too many who are not, nevertheless, greedily adopt the fashions, and mimick the manners of the great, by more criminally and needlessly refusing to suckle, and abandoning that tender charge with which nature herself has intrusted them.

It gives me real concern to find occasion for such unpleasant reflections upon any of the sex I so much honour, and upon any of my fair, and sensible countrywomen, in particular. Nevertheless, I cannot help suspecting, that wherever such neglect does exist, whether in regard to suckling, or superintending the management of their children*, and does not arise from want

* This seems to be the case at present in both regards, amongst the lower class of people in France: and that nation is therefore very much indebted to the goodness of the late Monarch,
who

14 *Which is sometimes very criminal,*

want of health, or some equally warrantable excuse, it can be charged only on the depravity of the age, which insensibly corrupts the taste, and perverts the judgment of many who wish to do well. And depravity of manners, when once become general, has ever been considered as the leading symptom of a falling empire, and ought to be pointed out as far as it extends, by every friend to the community, at whatever hazard of giving offence, in every conspicuous instance of it. Tacitus complains

who to the last, was making solicitous inquiries through *Europe* to discover the best substitute for the breast†. Should the method recommended in the subsequent pages be, amongst others, adopted, its claim will soon be determined; and I venture to hope, will yet be to the advantage of the rising generation in that kingdom, and elsewhere.

† See *Questions* proposed to the *Royal Society of Medicine in Paris*, October 1789, by the late KING's authority.

of

and is noticed in every civilized Country. 15

of the degeneracy of *Rome* in his days, (though by no means its most degenerate era,) lamenting that, while in former times grave matrons attended to their children, as their first family concern, they now, says he, intrust them to the care of some *Grecian* girl, or other inferior domestic.—It is no small satisfaction to me, however, to observe, that in this country there has been no ground for a general complaint on this head, and that the evil is annually diminishing: there are also examples in high rank of a nobler conduct, and one peculiarly elevated, which were it exactly copied, would prove the glory of the present day, and a blessing to the rising generation.—May the time hasten when it shall be universally followed, whilst I attempt to point out as far as my observation has extended, the most prudent

16 *Great Attention to Infants is a Duty,*

prudent means of executing this important branch of female duty.

It may not be amiss, at the opening of the ensuing observations to remark, that the demand for the multifarious directions here offered, as well as all those given by other writers on the management of children, arises from the false reasoning of those to whose care the infant state is frequently intrusted; who instead of being guided by the sober dictates of nature, have adopted the rules of art, falsely so called, or have followed the wild fancies of anile superstition.

ON the other hand, the various tribes of the irrational species act in a thousand instances more prudently than we do, and being uniformly guided by instinct, are led implicitly, and safely through all their operations. Many quadrupeds, fish, and even reptiles

and ought to commence from the Birth. 17

tiles seem to know what is proper for them as soon as they come into existence, and have strength sufficient to reach after it. In other instances, they are guided by the parent, who seems to adjoin some degree of knowledge acquired by experience, to the instinct with which it is naturally endowed. Man on the contrary, designed to be the pupil of observation, has scarce any innate discernment; and consequently his infant race pass through a long period utterly helpless, alike divested of ideas to guide, and of strength to manage for themselves. But to the Parent is imparted both; whose province it is to judge for them, and actually to put into their hands or mouths, whatsoever they may stand in need of. When the parent, therefore, forsakes the paths of simplicity, and lays down arbitrary rules, the result of false science, instead of patient ex-

VOL. III. C perience;

perience; or mistakes the clamour of fashion for the voice of nature, confusion and disease must be the unavoidable consequence.—Awakened by these, man is loudly called upon to return to the simplicity of nature, and the result of dispassionate observation. It is this will be our aim in the work before us, wherever deviation and danger are connected; assured, that the experience of the most judicious and successful amongst my readers will applaud the design, and confirm the generality of our observations.

To this end, let us imagine an infant just born, who, doubtless, at this moment, calls for our best attentions. And first, it may be observed, that it ought not to be exposed to any thing that may violently, or too suddenly affect the senses: on which account, the most ancient writers have well advised, that it should not be
exposed

wanting in Tendernefs and Prudence. 19

exposed either to great heat or cold, nor to a strong light, nor odours of any kind, however grateful to adults; the unpleasant effects of which are fufficiently manifested by the infant itfelf.

THE attention will next be called to washing and drefling it, together with other little offices fuited to the occafion. And this firft washing is of more importance than is ufually imagined, being amongst the *little* things which are often overlooked by writers and others: but it is not every little thing that may fafely be neglected, or ill-done. In regard to poor people, efpecially, and infants born in hofpitals, and other crouded apartments, the importance of proper washing is greatly increafed, the foulnefs left upon the fkin being a remote caufe of fome dangerous complaints, particularly fuch as infect certain diftricts. Some infants

also are covered much more than others with a thick, viscid matter, which cleaves so fast to the skin, that it is not easily washed off, which there is, however, another reason for doing, as it would obstruct perspiration, which can never be duly performed, where the skin is left anywise foul. On this account, the nurse should be very attentive to this first concern of her infant charge, and whatever wash she may make use of, it should always have soap in it, and the child be well rubbed, especially under the arms, in the hams, and groins, where this mucus is apt to adhere: and to this end, it would be better she should not make use of pomatum, or other grease, which tends to stop up the pores, and prevents perspiration; or that she be, at least, very careful the grease be afterwards well wiped off. In the same view,

view, it were well if it were a common practice to repeat the washing for two or three days, with light frictions of the skin; which it is not improbable might tend to prevent the red-gum and other similar affections of the skin, with such other complaints as may arise from the suppression of insensible perspiration.

AFTER a little time, and sometimes on the next day, most nurses wash a child all over with cold water; a practice highly extolled by Dr. ARMSTRONG, as well as many other practitioners. But though no one can be a greater advocate for every thing that is bracing than I am, I cannot approve of this substitute for cold-bathing, as it is called; at least, as an indiscriminate practice. The cold-bath acts on a quite different principle, and is so very beneficial, that I could wish almost every child, especially those

22 and may frequently prove injurious.

born in *London*, were bathed at three or four months old, (provided they be not costive, nor feverish at the time, have no internal obstructions, nor the season of the year be improper;) which I am certain would remove, or perhaps prevent, many of their complaints*. But to see a little infant of a few
few

* *Monfr. Le Febure de Villebrune* in his translation of my diseases of children into *French*, has added a chapter upon *baths*; in which he highly extols the warm-bath, and as strongly controverts the idea of the probable good effects of cold-bathing, and even makes use of a long chain of arguments against it, deduced, indeed, from an ingenious theory, and supported by quotations from the ancients; who practised, however, in a very different climate.—The shortest, and, perhaps, the best reply to this specious reasoning, might be given in the well-known mode of *DIOGENES* to *ZENO*, whose arguments against the possibility of Motion, *DIOGENES* laconically refuted, by hastily getting up, and walking across the school. We have, in like manner, only to point to the number of children and young people, who from very weakly infants, have

few days old, the offspring perhaps of a delicate mother who has not even
strength

have been rendered strong and healthy, merely from a prudent use of the *cold-bath*; and may defy any man to produce the like instance of its opposite effects when made use of with the cautions which every powerful remedy requires.

AND, indeed, from the surprising good effects that sometime follow the use of Cold-baths, I do not wonder that Priests, in times of ignorance, have been known to account them holy, and dedicate them to some Saint; to whose influence certain Cures were attributed.

THE salutary operations of the cold-bath are, however, easily accounted for, from its promoting insensible perspiration, and rendering that excretion less readily affected by the impression of the external air.

IT may be known to agree with children, when they come out of it warm, lively, and their strength increases on the use of it. On the other hand, if they continue cold, are dispirited, and seem rather to lose strength, it may be as often prejudicial.

As a mean of acquiring that re-action and glow, which bathing is designed to effect, some people have very rationally recommended throwing a

24 *Principle, producing a general Glow,*
strength to suckle it, washed up to the
loins and breast in cold water, ex-
posed

loose flannel chemise over the child the instant it is taken out of the bath. This will not only secure from the unpleasant shock arising from the cold air, but allow time for friction, along the course of the back-bone, which should be continued all the while that an assistant is employed in wiping the lower limbs, and putting on their usual covering. If this were duly attended to, I am persuaded, that both many infants and adult persons would be benefited by cold-bathing, who for want of that kindly glow, are unable to bear even bathing in the sea.

BUT I must observe, that the above mentioned unpleasant effects are frequently owing to an improper use of bathing, and for want of making a very obvious discrimination in the habit of body of different children.—For the tender and delicate, not only should a good quantity of salt be put into the bath, but the water should also at first be a little warmed, and children be brought only by degrees to endure it quite cold, which they will not by this means be the less likely to do: or should the water never be perfectly so, (but merely below the heat of the skin) the advantages of such bathing will, nevertheless, be considerable; though
the

and is a safe and salutary Remedy; 25

posed for several minutes, perhaps in the midst of winter, (when children are

the late Dr. HUNTER and others have thought differently. It is not, I apprehend, merely from the coldness of the water that the benefit arises, but is rather from the subject being suddenly immersed into a very different medium, (if so be, that medium be not actually warm) in which the contact of the external air is taken off during the immersion, and is as suddenly restored on his being taken out. By this means, the blood is alternately pushed forward into the extreme vessels, and suddenly repelled to the heart, (in proportion to the coldness of the water and the powers of the system) and suffers an advantageous attrition against the sides of the vessels. The small passages are rendered pervious, and the contractile power of the heart is increased, as well as the muscular fibres proportionally strengthened.—The salt added to the water pretty certainly prevents taking cold, whilst it adds to the stimulus on the skin, and has therefore a more salutary operation on the pores.

FOR the sake of some readers it is necessary to observe, that a child is to be put only once under the water at each time of bathing, and to be taken out as soon as it is possible. It should be received in a blanket, and be wiped dry with a cloth in the most

26 *and an effectual Mean of Cleanliness.*

are more liable to disease than those born in summer;) itself in one continued scream, and the fond mother covering her ears under the bed-clothes that she may not be distressed by its cries; has ever struck me as a piece of unnecessary severity, and favours as little of kindness, as plunging an infant a second or third time, into a tub of water, with its mouth open, and gasping for breath, in the old-fashioned mode of cold-bathing: both of which often induce cramps and pains in the bowels, and weakness of the lower extremities, but rarely an

most expeditious manner; and as soon as it can be dressed, should partake of such exercise as may be best suited to its age; and by no means be put into bed. There will need no great attention to its being wiped perfectly dry, as a child will be less liable to take cold from a few drops of salt-water being left upon it, than by being long uncovered in some parts of its body, in an over-caution to wiping it dry.

increase

increase of strength. It surely cannot be amiss, in winter time at least, to take the cold off the water for the few first days, which it has been observed, will be useful in other respects; and whenever cold water is made use of, it will be quite sufficient to wash the child as far as a regard to cleanliness may require, which will always be the parts exposed to the worst kinds of galling and chafing: on which account cold water is certainly useful. With this view, beside the groins, and contiguous parts, the arm-pits, folds of the neck, and parts behind the ears, being also disposed to slight chafings, may be occasionally washed in like manner, and if the discharge be not checked by it, they should be dusted with a little hair powder, the powder of calamine-stone, or of ceruse, or a little white vitriol may be added to the water; which if the ex-

coriations

coriations are not very considerable, will generally heal them very soon: should these fail, they may be dressed with the red drying ointment of *Bates's* dispensatory; with exceptions, however, of the ears. But there is a still more troublesome excoriation that happens during the month, particularly to infants subject to much acidity at the stomach, and very green stools; in this case, the parts covered with the cloths are peculiarly chafed, and while such acrid motions continue, this will not be healed by any drying applications. I have found nothing so pleasant, and useful in this case, as covering the parts with the thin skin found upon the veal kidney, which softens, and cools them, till the cause of the complaint may be removed by the use of proper absorbents. There is a mixed affection of this kind, however, in which these
parts

Consequence, if Infants be kept clean. 29

parts are not actually excoriated, but are very hard and swollen, as well as painful and inflamed; and the affection seems to be kept up by the acrid nature of the excretions, though not originally caused by it. In this case, instead of daubing the parts with wetted fuller's earth, gruel, or greasy mixtures, an embrocation of elder-flower-water, with as much boiling milk as will render it moderately warm, has been immediately efficacious. But one grand mean of keeping children from chafing is to preserve them very dry and clean*; articles of so much importance,

* To this end, inferiour people need to be admonished, that all the cloths should be properly *boiled* every time they are *washed*; a circumstance such people are apt to neglect.—Another error worthy of remark in this place, is, that of wearing a pilch (as it is called;) an old fashion still too much in use, and contributes not a little to make children weak: it being originally designed to be worn

30 *Particular Modes of Cleanliness*

portance, that I should have insisted much longer upon them, if I had not already exceeded the bounds I had intended. It may be necessary, however, to drop a word more with a view to counteract a vulgar notion, familiar only to common people, that a frequent change of linen has a tendency to weaken new-born children; an absurd idea that has not the smallest foundation in reason or fact. It is, on the other hand, next to impossible, that a child should thrive or be heal-

worn only for the first few weeks after birth, but is often continued for as many months. It can answer no possible end but that of saving a little trouble, since instead of keeping children dry and clean, it has the directly contrary effect; for if it has received any wet through the usual cloth laid under it, it ought itself to be changed as often as the other, or must certainly be damp and uncleanly; whilst by heating the loins, and lower limbs, it has a manifest tendency to relax, and dispose infants to become rickety.

thy,

thy, if the strictest attention be not paid to cleanliness, which together with the articles of food, good air and exercise, are, perhaps, the principal ones in which the children of poor people are at a great disadvantage, and which become a constant source of rickets and distortions among them. Let not these ill-effects fall on the children of those whose misconduct alone can expose to them. And, indeed, little infants, if healthy, may oftentimes be so managed as to be much more cleanly, than even people of great delicacy have been wont to imagine; so as even to supersede altogether the use of cloths, either by night or day*.

ANOTHER

* I have, indeed, known only three or four instances of it, (though there may be many that I have not been made acquainted with;) one of which was in the family of a Lady of rank, whom I
was

32 MILK in the Breasts of Infants

ANOTHER useless operation practised by nurses, is, that of forcing out the milk from the little breasts of new-born infants. Some children a day or two after they are born, have the breasts exceedingly tumid, hard, and painful, containing something like milk; and nurses imagine it to be a great kindness to milk it out, as it is called. But I have often been grieved, to see a nurse rudely rubbing, and even squeezing the breasts, already in a state of inflammation, and continuing it even for some minutes, though the child's cries might convince her she is putting it to pain. In the case of inflammation, a bit of bread and milk

was some years ago attending. I was there myself a witness to the good effect of holding a little pan under an infant of only four months old, as it lay across the nurse's lap; which I was assured had been her practice from the month, and that the Lady had obliged her nursery-maids to do the like with her two former children.

• poultice

poultice is the properest application, but if the part be not inflamed, it can want nothing at all ; though if it be thought something ought to be done, a little oil with a drop or two of brandy may be gently rubbed in, or small pieces of the litharge-plaister may be applied, and lie on the parts till they fall off themselves. I have, indeed, had sufficient evidence of such considerable tumefaction and hardness, as to satisfy me, that when no violence is offered to the parts, the application of a bread and milk poultice will always prevent either suppuration, or other unpleasant consequence. I have met with instances in which the tumour has been much larger and harder than I could have suspected on such an occasion, and yet after continuing for more than a week without any sensible diminution or amendment, has soon afterwards subsided entirely.

HAVING considered these necessary preparations, I proceed to offer a few remarks on the prevailing errors in *Dress*.

UPON the first sight of a new-born infant, every one is struck with the idea of its weakness and helplessness; and we often take very improper methods of strengthening it. It is *designed* to be weak and tender in this infant-state, as is every other object around us*. Take a survey of nature, from the first opening leaves of the vernal flower, or the more delicate foliage of the sensitive plant, to the young lion, or the elephant; they are all in

* Nous naissons foibles, nous avons besoin de forces; nous naissons dépourvus de tout, nous avons besoin d'assistance; nous naissons stupides, nous avons besoin de jugement, tout ce que nous n'avons pas à notre naissance, et dont nous avons besoin étant grands, nous est donné par l'éducation.

ROUSSEAU.

their

INFANTS, *though, indeed, weak and helpless*, 35

their several orders, proportionally weak, and cannot exist without some exterior support. But they stand in need of nothing but what nature has prepared for them. If seed be cast into a proper soil, it wants only the surrounding elements to ensure vigour and maturity. So if the tender infant be born of healthy parents, and at its full time, it is usually sufficiently strong; proper food and nursing are the elements whose fostering influence it requires—if it have these, it will need nothing more.

It is true, it is very weak; but is it therefore to be tight rolled, under the idea of supporting it, and giving it strength? It is a bundle of tender vessels, through which a fluid is to pass, undisturbed, to be equally distributed through the body, and which are therefore surrounded by a soft medium, capable of yielding to the im-

36 *want only Attention and Tendernefs.*

petus of their contents. Hence we cannot but conceive, how injurious any great preffure must be to so delicate a frame, which before birth swam in a soft fluid. But besides this, the infant requires freedom and liberty on other accounts: the state of infancy and childhood (as Dr. GREGORY observes) is impatient of restraint in this respect, through “the restless activity
“incident to youth, which makes it
“delight to be in perpetual motion,
“and to see every thing in motion
“around it.”

LET us again advert to the irrational species, whose more sagacious conduct so often disgraces our own. There is no occasion on which they do not seem to consult propriety; and having a right end in view, they as certainly accomplish it, and always in proper time—Doth a little bird design to prepare a lodging for her young! it is
sure

sure to make choice of the fittest situation, whether to defend them from dangers, or obtain the most convenient supply of their wants; if to this end it be necessary to construct the nest of rough and strong clay, it is still lined with down: the young lie warm and secure; but they lie at their Ease.

I AM not ignorant, indeed, that for many years past, the very ancient tight mode of dressing infants has been discontinued, for which we were probably first indebted to Dr. CADOGAN. It is certain also, that for the last thirty years, the fashion recommended by him has been improving; but there is yet room to go forward, and were every tender parent in this country thoroughly sensible of its advantages, it would soon become fashionable to see children as much at their ease on a christening-day, as they are when laid at night in their beds. And I may be

permitted to add here, what every modern practitioner has adverted to, that were strings, almost in every instance, substituted for pins, physicians would seldom be at a loss to account for the sudden cries, and complaints of infants, which are too often produced by this needless part of their dress*—A practice, it is to be hoped, which may in time be laid aside, since some of the first families in the kingdom have already set the example.

NATURE knows no other use of clothing but to defend from the cold—all that is necessary therefore for this pur-

* A gentlewoman many years ago informed me, that one of her children, after long and incessant crying, fell into strong convulsions, which her physician was at a loss to account for, nor was the cause discovered till after death; when on the cap being taken off, (which had not been changed on account of its illness,) a small pin was discovered, sticking up to the head, in the large fontanelle, or mould.

pose,

pose, is to wrap the child up in a soft loose covering, and not too great a weight of it; to which ornaments enough might be added without doing mischief. And had this matter been always wholly left to the judgment of parents, that is, probably, all that would have been done; but the business of dressing an infant is become a secret, which none but adepts must pretend to understand. The child itself, however, discovers to us the propriety of such clothing, by the happiness and delight it expresses every time it is undressed, and rubbed with a soft hand. Whereas, *the art of dressing* has laid the foundation of many a bad shape, and what is worse, of very bad health, through the greater part of life. Instead, therefore, of a scrupulous and hurtful attention to such formalities, nurses would be much better employed in carefully examining new-born in-

phants in order to discover any malformation of parts, especially those concerned in the excretions necessary to life, which, it has been said, is sometimes over-looked.

THE tender infant being dressed, and having undergone such other little discipline as has been mentioned, is usually so far fatigued by it, as soon afterwards to fall into a sound sleep. We shall consider it as in this state, and leave it a while to be refreshed, whilst I endeavour to conduct the fond mother through the various other duties it calls for from day to day, till it happily arrives at an age free from the peculiar dangers of infancy.

IN the pursuit of such a plan, we meet with a variety of miscellaneous articles, and though many of them are not of apparent magnitude in themselves, are in their consequences highly worthy of notice ; which that they may
be

The first of these relates to AIR. 41

be thrown into some kind of order, may all be very well classed under the several heads of the *Non-naturals*, as they are called. Such are, Air; Meat and Drink; Sleep and Watching; Motion and Rest; Retention and Secretion; and the Passions of the Mind; a due attention to which, may prevent many of the evils incident to this tender age—The first of these was said to be AIR.

THE great importance of this has been set forth when speaking of the Diseases of infants: I shall here in a more particular way observe, that the age, constitution, and circumstances of the child, and the season of the year, ought always to be taken into consideration, *that* being highly proper on one occasion, which would be very detrimental on another. In general it may be said, that warmth is friendly to very young infants, but they should, nevertheless, be inured gradually to endure

endure the cold air, which is absolutely essential to their health. I cannot therefore agree with Dr. ARMSTRONG, who thinks the rich lose fewer children than the poor, because they are kept warmer. On the other hand, it was aptly said by one, that "a warm nursery fills a cold church-yard." In fact, it is not a merely cold, but a damp and confined air, that is so injurious to children, and to which the poor are peculiarly exposed, especially during sleep. Much caution, indeed, is necessary on this head in this unsettled climate, and evinces the necessity of parents superintending those to whose care they intrust infant-children, since nursery-maids are often indiscreet in keeping them too long in the air at a time, which is a frequent occasion of their taking cold, and deters many parents from sending them abroad so often as they should. Another, and a worse,

a worse, as well as common fault of nurses and servants, is, that of standing still with children in their arms in a current of air, or even sitting down with other servants, and suffering children who can run about, to play at a little distance by themselves, sit down on the grass, and such like; the consequences of which are often a long confinement to a warm room, and either a prohibition against going out so much as they ought, or a fresh cold owing to some of the like irregularities.

BUT if children be properly clothed and attended to, they will not only endure a great deal of very cold, but of other inclement weather; though it has been observed, that caution and prudence are required in training up infants to withstand, and profit from being abroad when the air is very cold or moist. Notwithstanding, it certainly may be accomplished; and it is
a known

a known fact, both amongst the higher as well as inferiour ranks of people, that those children are the healthiest, and suffer the least from colds, who are accustomed to be abroad in almost all kinds of weather. But to render children thus strong and healthy, it is not sufficient that they be abroad daily in a coach; they should be carried on the arm, and be put on their feet, at a proper age, and partake of such exercise, for a reasonable time, as shall keep them moderately warm, and bring them home in a glow, instead of wishing to rush towards a fire the moment they return; such sudden transitions being always improper, and only render children more liable to take cold.

A GERMAN writer has some such pertinent remarks on this head as it will scarce be thought a digression to transcribe. "The important step" (says he,) "a man takes into this
" world.

“ world imparts to him all the privi-
“ leges thereof, of which this is one,
“ the ability to bear the effects of the
“ air. Why then debar him from this
“ privilege? as he is all his life to
“ be encompassed with this air, at one
“ time cold, at another warm, now
“ moist, again dry. For the cold of
“ the air so anxiously avoided, brings
“ along with it the means that secure
“ against its own inclemency; the
“ great strength of fibres, imparted by
“ it to the child, procures, by means
“ of a brisker circulation, a greater
“ degree of heat, and consequently the
“ reverse of its violent impression.
“ This, indeed, may seem unintelli-
“ gible to those who imagine the hu-
“ man body to be only an hydraulic
“ machine, consisting of innumerable
“ tubes, in which the wheel is moved
“ without a proper power, conse-
“ quently

46 *The great Advantage of Air.*

“ quently without a sufficient reason ;
“ not to those who can distinguish be-
“ tween the effects of nature and art,
“ who are apprised of the power that
“ moves the animal body, and that
“ the sensations are such a power,
“ which arise without our knowledge
“ and our will. To such only it will
“ be intelligible, in what manner an
“ increased resistance, produced by the
“ cold in the solids and fluids, is ca-
“ pable of bracing the heart, the
“ source of life. From a slight know-
“ ledge of mechanics we come to un-
“ derstand that the resistance dimi-
“ nishes that power, which in animal
“ bodies it increases ; come to see,
“ that the most ingenious construc-
“ tions produce no manner of motion ;
“ that all mechanical laws are, indeed,
“ perfectly just, but more accurately
“ to be determined, in order to a pro-
“ per

“ per application of them to the hu-
“ man body, in which the will, ima-
“ gination, and sensations, are the
“ springs of motion, without which
“ all motion would cease, and only
“ leave a machine resembling a water-
“ work, to be carried about by wind.—
“ We need only appeal to experience,
“ which will teach us, that in order
“ to a healthful state, we need not be
“ brought up like those who are in-
“ dulged with a bed of down, and a
“ warm room, but those, of whom
“ no extraordinary care being taken,
“ are greatly left to their own dis-
“ posal.”

It is, indeed, generally owing to sudden transitions only that some infants so readily take cold. This sometimes happens as soon as they are born, and repeatedly during the month; the slightest symptom of which is that
called

called the *Snuffles**, or stoppage of the nose. This is, indeed, a trifling complaint, but as such, may be just noticed in this place. It usually requires nothing more than a little pomatum, or pomade divine, to be put to the nostrils when the child is laid in the cradle, or if this fail, a little white vitriol may be dissolved in rose-water, and the bridge of the nose often wetted with it.

It will be adviseable, in order to inure infants to the air, that they be short-coated as early as the season of the year will permit; but their dress should be still loose and easy, and they may continue without stockings even two or three years, and boys till they are breeched. As to this change, I

* For a disorder of this kind, of much greater magnitude, see the article *Morbid-Snuffles*, vol. 1. page 45.

think,

think, it might with more propriety be made in the beginning of winter, than in summer, as the dress upon the whole is warmer, especially about the chest, which from having been open for three or four years, it seems rather strange to cover, all at once, at the beginning of hot weather.

BUT though I have said children would be as well without stockings, for a considerable time, I must remark, that this position requires some discretion in the application.—*Attention to Circumstances* should not only be the motto of physicians, but of common life, and we should be guided by it in regard to all general rules. For want of this caution in the present instance, tender children suffer exceedingly in severe winters, and are distressed with chilblains merely for want of proper covering to their

tender limbs. I have seen a child of four years old, the daughter of people of fashion, (who I know will pardon my mentioning it) whose legs were covered with these sores up to the knee, and yet the lady could not be prevailed upon in time, to suffer stockings to be put on, because strong and healthy children are thought to be better without them.

THE second Article under the head of Nonnaturals refers to MEAT and DRINK, and is worthy of ample discussion; having as yet been considered only in relation to the expediency of breast-milk, where that may anywise be procured.

IN the first place it may be remarked, that although an infant be suckled by its own mother, it certainly can stand in no real need of any food, till the time nature will bring milk
into

New-born Infants certainly do not 51

into her breast, supposing the child be laid to it in proper time; which, doubtless, ought to be as soon as she may, by sleep or otherwise, be sufficiently refreshed to undergo the little fatigue that an attempt to suckle may occasion. This method, however unusual with some, is the most agreeable to nature, and to observations on the irrational species, who in many things are the very best guides we can follow. And herein, I am constrained to differ from a late writer whom I have more than once quoted with approbation; for by means of putting the child early to the breast, especially the first time of suckling, the nipple will be formed, and the milk be gradually brought on. Hence much pain and its consequences, will be prevented, as well as the frequency of sore nipples, which in a first lying-in, have

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been wont to occasion no inconsiderable trouble. But should this, or even an abscess take place, they are both far less distressing under proper management than has been usually imagined*. However, should the mother be unable to suckle, and a wet-nurse be engaged, there can be no harm in putting the child to the breast, after it has taken a dose or two of the opening medicine; or should it be brought up by hand, and not easily kept quiet, a spoonfull or two of wa-

* See a Treatise upon Ulcers before mentioned, in which the *milk-abscess*, and *fore nipples* are fully considered, and a successful, and easy method of treatment pointed out. Amongst other little contrivances to obviate the latter evil, as well as otherwise assist the suckling mother, the vegetable nipple-cover, sold at *Bacon's* in *Oxford-street*, is worthy of trial, where the evil is not so great as to require the assistance of that contrived by *Mrs. Relfe*.—(See page 8.)

ter-

for several Hours after they are born, 53

ter-gruel, sweetened with a little Lisbon-sugar, or honey, may be given for this purpose, which will usually set it asleep; after which it will be ready for whatever culinary food shall be thought proper for it.

AND on this article, a vast croud of absurdities open upon us at once; and many of them with the sanction of custom and authority. I shall first advert to the thickness of the food: and it has, indeed, been matter of wonder, how the custom of stuffing new-born infants with bread could become so universal, or the idea first enter the mind of a parent; that such heavy food could be fit for its nourishment. It were well if the fond mother, and all well inclined nurses had more just ideas of the manner in which we are nourished; and especially, that it is not from the great quantity, nor

from the quality of the food, abstractedly considered. They may very easily conceive, that our nourishment arises from the use the stomach makes of the food it receives, which is to pass through such a change, called digestion, as renders it balsamic, and fit to renew the mass of blood, which is daily wasting and consumed. An improper kind, or too great a quantity taken at a time, or too hastily, before the stomach has duly disposed of its former contents, prevents this work of digestion, and by making bad juices, weakens instead of strengthens the habit; and in the end produces Worms, Convulsions, Rickets, King's-Evil, slow Fevers, Purging, and general Decay.

NATURE, it should be considered, has provided only milk, for every animal adapted to draw it from the breast,

MILK is certainly the most natural, 55

breast, and that of women is certainly amongst the thinnest of them; but at the same time, far more nutritive than bread, and, probably, than any other milk, as it contains a greater proportion of saccharine matter*, which is thought to be that quality in all our food which renders it nutritious. It is true, bread†, as it requires more digestion, will lie longer on the stomach both of infants and adults, and hence, probably, because it satisfies the present cravings, it has been conceived to afford a greater proportion of nou-

* The sugar, or salt, of human-milk is one third more in quantity, and its extract, or solid contents, is double as much as in cows. See the Table at the end of the *Introduction*.

† Under this term is comprehended rusks, biscuits, and every similar preparation of baked flour.

nourishment; though mixed up only with water, as it too frequently is, it is far less nutritive than has been imagined. Children ought to be frequently hungry, and as often supplied with light food, of which milk is really the most nourishing that we are acquainted with. This could never be doubted, but from its passing so quickly out of the stomach; on which account, indeed, though not the properest food for adults, employed at hard labour, and many hours from home, it is the fittest of all for the sedentary life of a tender infant, who cannot get that nourishment from bread or other solid food, of which the stomach of the adult is capable. It must have been for want of attention to this consideration, that Dr. ARMSTRONG has said so much in favour of bread and other thick victuals; which, by the bye, he began to make

make use of for his own children (from its success in whom he has ventured to recommend it,) at the age of six or seven months; a matter very different from stuffing an infant with it almost as soon as it is born. For every thing the stomach cannot digest, it has been said, may be justly considered as a poison, which if not puked up, nor very soon voided by stool, may occasion sickness, gripes, what are called inward-fits, and all the train of bowel complaints, which may terminate in one or other of the evils just mentioned.

MILK itself, (like all the other animal juices) is produced from food taken in by the mother, and is the richest part of it. It is in her stomach that the aliment is dissolved, or digested, which by a combination of powers in the appropriated parts for preparing the chyle, is so far animalized

lized as to be converted into a kind of white blood; from whence it has been observed, every animal body is daily recruited. Hence it is very apparent, that previous to an infant having acquired strength enough to convert solid food into this wholesome chyle, or white blood, the parent, by this wise substitution in nature, has, in a great measure, previously, accomplished this work for the infant she is to nourish. During infancy, therefore, both nature and reason most clearly point out the expediency of a milk diet*; but

* Whether the parent be able to suckle her own child, or that office be performed by a hired-nurse, is not here particularly considered. The design is only to prove that milk is in general the most proper food for an infant. Whether that, indeed, be prepared by its own mother, a nurse, or by such animals as the cow, or the ass, is equally to the purpose; and where the former cannot be had, the best, and most natural substitute, should be provided.

how

as it were, half-digested already. 59

how long it ought to be persevered in, or infants wholly confined to it, is not easily ascertained, and will be further considered in its place, with a latitude that the question demands. There is a period in life, indeed, to which this nutriment is more particularly adapted, both experience and theory demonstrating it to be more suitable to young people than adults; and it has been observed, that it does not appear, that the stomach of the cow will produce the same change upon milk, as that of the calf does, which is, therefore, constantly made use of in dairies, for separating the curd from the whey.

It can scarcely be improper before I entirely quit the article of suckling, to relate a recent instance, and a remarkable one out of many, as a proof of the degree to which infants may pine for the breast, even to the great hazard

hazard of perishing for the want of it, where the real cause of the disease is not suspected. This little history will likewise further serve to illustrate the preference of human-milk which has been so strongly insisted upon.

THE little infant alluded to was very healthy when it was three months old, and was then weaned on account of the illness of the wet-nurse; but soon afterwards ceased to thrive, and had continual bowel complaints. At the age of nine months I was desired to visit it, and was informed that it slept very little, was almost incessantly crying, and had for many days brought up nearly all its food, was become very rickety, and had all the appearance of an infant almost starved. Trial had been made of every kind of food, except the breast, and the child been many weeks under the care of an experienced apothecary; was constantly
in

pining to Death for want of the Breast, 61

in a state of purging, and seemed to have been just kept alive by art.

ON the first sight of the child, and upon the very face of this account, it was very evident, that the infant was not nourished by the food it received, and that the complaint lay wholly in the first-passages. But reduced as it was, I had little expectation from medicines, and therefore gave as my opinion that either the child still pined for the breast, in which case, I doubted not, it would take it, though it had now been weaned six months; or, that it ought to be carried immediately into the country, and be supported for some time only upon asses milk, or perhaps be fed, now and then, with a little good broth.

My advice being taken, a good breast was procured, which the infant seized the moment it was put to it, and after sucking sufficiently, soon fell asleep

62 *and recovering upon getting it.)*

asleep for several hours; waked without screaming, and took the breast again. It is sufficient to add, that the child ceased to puke or be purged, and recovered from that hour; and after sucking eight or nine months longer, became in the end a fine healthy child.

ALTHOUGH this instance has something extraordinary in it in respect to the length of time the child had been taken from the breast; and though infants are generally completely weaned in six or seven days at the furthest, it is yet no uncommon thing for children, when ill, to take to it again, after seeming to be thoroughly weaned for three or four weeks. And this circumstance is the more worthy of notice, as it sometimes is a very fortunate one; and should encourage parents to make the trial whenever infants newly weaned may be seized with
any

any complaint, under which a return to the breast may be useful. Such, particularly, is the whooping-cough; under which I have known a child of more than a year old, and apparently thoroughly weaned for a month, take to the breast of a stranger very cheerfully, in the presence of its former nurse, with the precaution only of leading it to make the first attempts during the night. Such children for the first few days turn away from the new wet-nurse to their former one, as soon as they have satisfied themselves at the breast, and go back to the nurse again very readily whenever they find an inclination to suck.

To return; I am free then to lay it down as an axiom, that milk ought to be the chief part of the diet of infants for a certain time, whether it be breast-milk or any other, and that it will prove sufficiently nourishing for nineteen

64 of feeding Infants from the Birth,

teen out of twenty; I might perhaps say ninety-nine out of a hundred: exceptions, I believe, there may be, but much fewer children would perish if no exception were to be made, than by absurdly rushing into the contrary extreme. But supposing a very strong child, at the end of the month, really not satisfied with milk only, and always craving the moment it has been thus fed, it, doubtless, may have a little boiled bread added to it, two or three times in a day; but I should be very cautious of extending it further*.

*“ In *Italy, Holland, Turkey*, and through the “ whole *Levant*, children are rarely allowed any “ other food than the breast-milk, during the first “ year:” (BUFFON) and the Savages in *Canada* suckle for four or five, and often six or seven years.—In some extreme northern climates, (as hath already been remarked) we know they can have no other food, for a long time; and yet, there, the death of an infant is as rare an event as that of a suckling mother.

In

In the case, however, of an infant at the *breast*, if it be always craving as soon as it is taken from it, the occasion of its craving will generally be found to be in the nurse's milk; previously therefore to allowing a more solid food, the quality of the milk, as well as the state of the nurse's health should be inquired into, and the milk be changed if its goodness be suspected. Perhaps where bread and milk is allowed, whether at a very early or a later period, it would be an advantage to boil a piece of roll, together with the upper crust, in a good deal of water, till it is very soft, by which means the bread will part with some of its acedent quality; the water should then be strained off, and the bread mixed up with the milk, which ought to be boiled if the child is very young, or inclined to a purging.

It would, I perceive, lead me beyond all bounds to enter further into this matter; and I should not, indeed, have said so much on the subject, had I not had it much at heart to persuade those whose affections would ever lead them right, were their judgments not previously perverted—I shall only add, that infants certainly ought not to be fed lying on their backs, but sitting upright; as they will in this position swallow their food more easily, as well as more readily perceive when they have had enough. So also children nourished at the breast ought to be withdrawn from it for a few moments, especially just after waking from a long sleep; for hereby, besides other advantages, much undue labour to the stomach will be prevented, as well as enabling it to retain what it has acquired; a part of which is otherwise frequently thrown up.

The FEEDING-POT is the most natural, 67

IF Milk be the proper food for infants brought up by hand, the next inquiry will naturally be, what milk is best? and what is the fittest instrument for feeding with? And it is from long experience, as well as from reason and analogy, that I venture again to recommend the ingenious contrivance of the late Dr. HUGH SMITH, set forth some years ago in a treatise on the Management of Children, in a series of letters addressed to married-women. The milk he likewise advises, is cow's milk in preference to all others, as being the most nourishing, and therefore, in general, the most proper; and I wish to refer the inquisitive reader to such other reasons as the Doctor has given, to which I can add nothing but my own experience of their validity. To the milk should be added a little thin gruel, or barley-

water, which forms a very smooth and pleasant nourishment. A few weeks after birth, (and I think in general the sooner the better) instead of the barley-water or gruel, there should be mixed with the milk a small quantity of a light jelly made from harts-horn shavings, boiled in water to the consistence that veal broth acquires when it has stood to be cold*. The design of the jelly is obvious and rational, at once calculated to render the food more nutritive, as well as to correct, in some measure the acescency of the milk; this quality being thought to abound

* There is sometimes a difficulty in making this jelly, on account of the harts-horn being bad; those who shave it, often mixing with it the shavings of trotters, which may, however, be distinguished by their brittleness. If the shavings are good, two ounces of them boiled very slowly in a quart of water to a pint, will make the jelly of a proper consistence.

in

that hath been hitherto devised, 69

in the milk of different animals, in proportion to the quantity of vegetables on which they feed. And the milk of quadrupeds, we know, is produced from vegetable juices only, whilst breast-milk is formed by a mixture of animal and vegetable food. A little Lisbon-sugar may be added to this compound of jelly and milk, if the child be not inclined to a purging, or in that case a little loaf sugar; but the less of either the better. It will be proper to have the milk and jelly warmed separately, and no more at a time than may be wanted; when it should be put into the small pot Dr. SMITH has contrived for the purpose, which must be very carefully cleansed and scalded, at least once every day, and the spout be thoroughly rinsed, lest any four curds should stick about it; and to this end, it may be conve-

70 and is equally pleasant to the Infant :

nient to be provided with two*. At first the milk ought to be boiled, to render it less opening, but when the child is several months old, or may chance to be costive, the milk need only be warmed. If it be fresh from the cow, and very rich, a portion of water may be added to it, whilst the

* The objection to this mode of feeding, that the pot may often be left foul, and therefore the food become sour, appears to me to be very far fetched; since if nurses are not to be depended upon in matters of cleanliness, and the sweetness of the food they are to administer, we can trust them in nothing, and infants must be continually suffering; there being a hundred particulars essential to children's health, in which servants cannot be always superintended, but must be entirely confided in.

HAVING been often sent to for a direction to the shops where the infant feeding-pot may be met with, I notice in this place that it is always kept at Mr. *Philips's* in Oxford-street, near Cavendish-square; *Storer's* in Piccadilly, near to Park-lane, and at *Neale's Staffordshire-warehouse* in St. Paul's Church-yard.

infant

Whilst by affording some little fatigue 71
infant is very young. Indeed, it ought to be as new as possible, since milk, as an animal juice, probably contains some fine subtile particles, which evaporate upon its being long out of the body.

THOUGH I have said cows milk is usually preferable to any other, it will be conceived, that I mean to infants who are strong and healthy. Asses milk, on the other hand, being more suitable for many tender infants during the first three or four weeks, or perhaps for a longer time, as well as for children who are much purged; as it is thinner and having far less curd than any other milk, it sits much lighter on the stomach, both of tender infants and adults. And, perhaps, it may be inferred, from the very different proportion of cream, and of cheefy principles, that the milks of different animals contain, that provi-

dence has rather considered the benefit of man than of the young of various quadrupeds; though, doubtless, the milk is likewise properly adapted to them.

IN regard to the mode of feeding infants, I can say from experience, that for the delicate and tender at least, the boat, the spoon, and the horn, are in no wise comparable to the pot; which is so contrived, not only as to please the child by its resemblance to the nipple, and the milk coming slowly into its mouth, but also to afford the infant some little degree of labour, in order to acquire the quantity it needs, (which the horn does not;) by which means the food is also duly mixed with the bland secretions of the mouth, which are necessary to digestion. The like little fatigue takes place in children nourished at the breast, and by this mean it is, that infants, especially
when

when very young, are not so apt to overfuck, as they are to be overfed by the boat or the spoon, the food of which being sweet and pleasant, and requiring only the trouble, or rather the pleasure of swallowing, the child is tempted to take too much at a time ; whilst the nurse often forces down a second or third boat-full, in order to put a stop to the cries, which indigestion from the first or second may have occasioned.

SOME writers have detracted from the advantages of this mode of feeding, by observing, that infants may be fed as slowly and cautiously by the spoon : but the fact is, that this is, indeed, one of the things in which servants, in general, *cannot* be depended upon, whilst there are such temptations to the contrary, (at least I have not met with many who could ;) nor will children, indeed, oftentimes endure

74 *is not tempted to take too much at a time.*

dure flow feeding, if they can anywise prevent it, but will be screaming all the while, instead of being kept quiet by their food: though the hope of quieting them, it has been observed, is frequently the nurse's sole motive for giving it. But when an infant *can* get it only slowly from the pot, and yet is itself all the while employed in the business, it will be agreeably diverted while it is acquiring its nourishment, in the same manner that it is amused at the breast.

THE pot is formed in the shape of an Argyle, or gravy-pot, with a long spout, rising from the bottom, and pierced only with a few small holes at the end, which is to be covered with a piece of vellum, or parchment; which being left loose a little way over the spout, is soft and pleasant to the infant's mouth, and it has been said, is nearly as acceptable to many children

as

Objections to this light Food considered, 75

as the breast, as I have often been a witness.

THIS manner of feeding is not only pleasant to the child but very convenient to the nurse, and the food equally at hand in the night as the day, being easily kept warm by a lamp, or even in the bed. The only objection I have ever known made to it by those who have made trial of it, is that which I esteem one of its greatest recommendations, which is, that children thus fed are frequently hungry, that is, they are what nature designed them to be; this food sitting light on the stomach, and being easily digested, like the breast-milk, children often need a supply of it.

I SHALL just mention another popular objection to the plan here recommended. This is taken from some fine children we meet with, who have been brought up by hand from the birth,
and

76 *and demonstrated to be ill-founded.*

and fed with thick bread victuals all the day long, whilst we every now and then see some of those who have been debarred that sort of diet, weak and tender till they become a year or two old. Not to stop here to observe, that this objection militates equally against children living on the breast, though that is the food nature has designed for them, it will be sufficient to say, that it is only strong children who may be bred up almost anywise, that can at all digest thick victuals; that there are others who cannot endure the least thickening in their food, nor any kind of bread; and that weakly infants, who are scarcely preserved by the most careful attention to their food, would soon be hurried out of the world if that attention were withheld. And this reminds me of an observation of a very judicious friend in the north of England, which greatly surprised me at the time,

time, as I had never met with any observation from him before, the propriety of which has not been exceedingly obvious and convincing. Upon seeing a number of fine children one day in *London*, he with some shrewdness observed, that we did not seem to have so many weakly half-starved children as he met with in the country, and that he had often before made the like observation in his journies to town. It appeared to me that my friend must lie under some mistake, and I accordingly mentioned my surprise at such a remark coming from him; when he removed my astonishment by insisting on the fact, with the following obvious solution of it. I apprehend, says he, there are scarcely any but fine and strong children in *London*, who live to be two or three years old, the weaker ones, for want of good air, and exercise, sinking under their infirmities; whilst

whilst the tenderest children in the country by being turned out to crawl in the wholesome open air, or by sitting at the door almost all the day, escape the fatality of your gross air and warm nurseries, and survive the trying periods of infancy, though some of them remain weak and rickety till they become old enough to endure severe exercise, which is alone able to strengthen them effectually.

I HAVE no doubt of there being certain exceptions to the mode of feeding I have recommended, that are worthy of more attention, although very few have actually come to my knowledge, and though I am persuaded, that as a *general* plan, it is both a natural and salutary one. Instances may be met with, however, of some very robust children who may require a more nourishing, and perhaps somewhat more solid diet; and the

the state of bowels in others, will call for a greater variety of food, and of a kind not calculated to be administered in the mode here recommended, as hath been already noticed under the head of purging. On these accounts, I would offer another observation or two in regard to the thicker kind of victuals; and first, that in families accustomed to bring up their children by the spoon, I think I have found a greater number of infants well nourished by the French, or the Uxbridge-roll boiled in water to a jelly, and afterwards diluted with milk, than on any other kind of pap. From such families I have likewise learned, that some *change* in the food is, however, frequently necessary, and will be indicated by the degree of relish which the infant may discover towards different kinds of food, as well as by their effects on the bowels; though the
child

child be not supposed to be at such times really unwell. Such changes principally respect the *different kinds* of bread, or other farinaceous substance usually mixed with milk, and sometimes the substitution of broth, for a few days, in the place of the latter*.

WHEN children brought up by hand become four or five months old, especially if strong and healthy, they may, doubtless, be allowed a thicker kind of victuals, because their digestive powers being by this time become stronger, they are able to extract good nourishment from it; though this change is not equally necessary for children brought up at the breast, at least, such do not require it so early; breast milk being more nourishing.

* More precise directions, in the case of disease, will be noticed further on. See also the article *Purging*, Vol. I.

than

than any other. The first addition of this kind, however, whenever it becomes necessary, I am persuaded, ought to be beef-tea or broth, which with a little bread beat up in it in the form of panada, will be at once an agreeable and wholesome change, and prepare them for further advances in this way. But as this cannot well be given oftener than once or twice a day, a little bread and milk may also be allowed them every morning and evening, as their strength and circumstances may require. A crust of bread likewise, as soon as the child has a couple of teeth, will amuse and nourish it, whilst it will assist the cutting of the rest, as well as carry down a certain quantity of spittle; a secretion, it has been said, too precious to be lost, especially when the digestive powers are to be further employed. As the child grows older, to broth

82 *when having acquired more Strength,*
may be added light puddings, made
of bread, femolina, tapioca*, or rice;
salep boiled in milk, and such like.
But to feed a child with veal, chicken,
or other animal food, before nature
hath given it teeth enough to chew it,
howsoever small it may be minced in
the kitchen, is altogether unnatural,
and can prove nourishing only to such
children, as from the great strength
of their natural constitution, need least
of all the assistance of art. It is by
degrees only, that children ought to

* The best *tapioca*, I believe, comes from the
French West-India Islands, and is called by the ge-
neral term, *farine*. It is in very common use also
in our *West-India Islands*, where it is made into
thin cakes, and is called *cassada*: in this form,
therefore, it is most likely to be genuine, and may
be preserved for a very long time.—Two ounces of
tapioca should be boiled slowly in three pints of
water, to a quart, and be then passed through a
sieve; a little milk being added, or not, as cir-
cumstances may direct.

be

be brought to such food; which at a certain period, indeed, is as necessary as a light diet at an earlier age: for it is certain, that the error of some parents runs the contrary way, and their children are kept too long upon a fluid, or too slender diet, whence their bellies and joints become enlarged, and the bones of the lower extremities too weak to support them, at an age when they want more exercise than their nurses can give them. For when they go alone, not only is a little light meat and certain vegetables to be allowed them once a day, or alternately, with broths, puddings, or blamange, white-pot, custards, and such like kitchen preparations of milk, but even a little red wine is beneficial to many constitutions. This will not only promote digestion, and obviate in great measure a disposition to worms, but by strengthening the habit, will

84 *They become better able to bear it.*

also render children less liable to become rickety, at the very period they are very much disposed to it. Such a plan is the rather insisted upon, because some parents the most desirous of doing right, fall into a like mistake even in regard to older children, whom they keep too low, allowing animal food only every other day to those of four or five years of age; which, unless in very particular habits, is surely an error. But so many little infants, on the other hand, fall a sacrifice to the use of indigestible food under the age of six months, being carried off by vomiting, purging, or fits, that whoever would preserve them over the most dangerous period of infancy, cannot too cautiously attend to their diet at this time*.

IT

* The average of births annually, within the bills of mortality, for ten successive years, as taken

It is a common direction in works of this kind, to point out the properest times for feeding an infant

taken a few years ago, was 16,283 ; out of which were buried under *five* years of age 10,145, and from amongst these 7,987 were under *two* years. So that almost *two thirds* of the children born in *London* and its *environs*, become lost to society, and more than *three fourths* of these die under *two years of age*.—This proves how hazardous a period that of infancy is, in this country ; and I am sorry there is so much reason to be persuaded, that the want of air, exercise, and a proper diet, has added, unnecessarily, to its dangers ; there being no such mortality in barbarous nations, whose inhabitants live in a state of nature, nor in any part of the known world, amongst other young animals.—Although these, and other calculations I have seen, should be found ever so accurate, it is a pleasant reflection, (to whatsoever the circumstance may be owing) that since the time they were taken, the proportion of deaths at the early period above alluded to, has been very considerably decreasing ; and the writer has noticed for some years, that the average of deaths according to these bills has not been more than *six* in *sixteen* ; which is but little more than *one third*.

brought up by hand, and to direct how often it may safely be fed. I shall just observe therefore, that no adequate rules can be laid down on the occasion, and on that account none ought to be attempted, since none can be sufficiently comprehensive; and I am happy in not being at all at a loss in this instance, wherein writers have differed so widely. For infants not usually taking too much at a time in the manner of feeding that has been recommended, on account of the little fatigue which, it was observed, they undergo in acquiring their nourishment, may generally be permitted to partake of it as often as they might of the breast. This is, however, by no means the case, when children are allowed to eat thick victuals, and are fed by the spoon, by which, it has been said, they are always in danger of
taking

taking too much ; an evil that cannot be too often pointed out.

BEFORE I close this head of the management of children, perhaps the most important of all, I shall point out the most suitable diet under the different complaints to which they are most liable. And after the hints that have been thrown out through the former part of this work, I need only observe, that as light a diet as is possible is usually called for when a child is unwell, let the disorder be almost whatever it may. If a fever should accompany it, the child will require still less food than in any other complaint, but plenty of drinks ; which may also be so calculated as to furnish nearly as much nourishment as the infant will require, and may in summer-time be given cold. Such are barley-water, water in which a crust of bread has been boiled, and thin

88 *when ill, must be carefully adapted*

tapioca; or if a purging attends, rice-water, and a drink made of harts-horn shavings, with a little baked flour in it. In this complaint, wherein more nourishment is required to support the child than under most others, (if not attended with fever) baked flour mixed up with boiled milk, (as mentioned under the article of purging) * is admirably calculated both as a proper diet and medicine; and if kept in a dry place, may be preserved fit for use for a considerable time. A like suitable food, forming a pleasant variety, may be made of a table-spoonfull of ground rice boiled with a little cinnamon, in half a pint of water, till the water is nearly consumed; a pint of milk should then be added to it, and the whole simmer for five minutes: it is afterwards to be

* Vol. I. page 131.

strained

strained through a lawn sieve, and made palatable with a little sugar. In this way, or joined with baked flour, milk may generally be made to agree very well even when the bowels are purged; and when it does so, proves exceedingly nourishing. Should it chance to disagree, owing to the great acidity of the first-passages, good beef-broth ought to be made trial of, which may be thickened with baked flour, instead of bread, and makes a very pleasant diet. Likewise the patent-sage, properly boiled, adding to every half-pint a large tea-spoonfull of red Port wine, for the use of infants of a week old; cautiously increasing the quantity of wine, as they grow older. A large family of children, whose bowels had been continually disordered in the use of various other food, has been brought up by this, which was continued till they had four, or
more

90 ACIDITY, *and disposition to WIND,*

more teeth, and were able to partake of puddings, and other common food.

PERHAPS much more has been said on the subject of acidity, by some writers, than really ought to have been; or it may at least be suspected, that a proper attention has not been paid to the peculiar circumstances of infants, who are all much disposed to it. Acidity when injurious, is, probably, oftentimes rather an effect, than the first cause of the disorders of infants. It seems, indeed, to be natural to them, arising alike from the weakness of their organs of digestion, and the nature of their food; though there is no doubt, that their complaints are afterwards aggravated by an abounding acid, or rather, probably, from this natural acid becoming morbidly acrid, through over-feeding, and other errors in their diet, or from its being accidentally confined in the
first-

first-passages, as hath been noticed in the Introduction. Nature, however, seems to have designed the food of infants to be acescent, and till the body be disordered, and digestion hurt by one cause or other*, this quality of their food is not likely to be very injurious to them, and probably, far less so than food of a very alkaline nature would be, with a like weak digestion. It is true, indeed, that as many similar complaints in adults, who feed on different diets, will have their varieties, and each have some relation to the different qualities of their food; so it is not to be wondered at, that the complaints of infants should be attended with

* Such cause, it has been observed, may be an over quantity, or too sweet a food, or a heavy and indigestible diet; which, indeed, prove more frequent occasions of a distempered acidity, than any thing else.

wind

wind and other marks of acidity, which in adults are usually the least hurtful of all; and are, indeed, for the most part, pretty easily corrected in children, while that is the only complaint. When they are much troubled with wind, therefore, it cannot be wrong to mix some carminative feeds, or the waters distilled from them, now and then, with their food, such as sweet-fennel, or cardamom feeds, very finely bruised; but dill-water is that I have generally recommended, and being a liquid, is always ready to be added to the food, without loss of time. But though such an occasional addition to their food is often exceedingly useful, I cannot help speaking against its being made a constant practice, by which children not only suffer when by accident, or absence from home, it has been neglected, but it destroys the very end
for

commonly imagined, because natural; 93

for which it was used, by the stomach becoming accustomed to it.

CHILDREN, however, become less subject to wind and hurtful acidities as they grow older, and the stomach gets stronger, as it is called. But should these complaints, notwithstanding, continue obstinate, two or three grains of the fine powder of chamomile flowers, or a few drops of the tincture of columba, mixed in water, and warmed with a little ginger, will prove exceedingly bracing to the stomach and bowels, and render them less disposed to acidity. Exercise also according to the age and strength, is a grand preservative and remedy, and especially making infants break wind after sucking or feeding. And this may generally be effected, as every nurse knows, by raising the infant up, and gently tapping it on the back,

94 *and the latter less so as Infants grow older.*

back, or rubbing its stomach, before it be laid in the cradle to sleep.

I SHALL only add further, that when milk is frequently thrown up curdled, a little prepared oyster-shell powder may be added to it, or a very small quantity of almond-soap, or of common salt*, which will not at all injure the flavour, and will prevent this change happening too soon in the stomach.

* It is a very great mistake, though a common one, to imagine that salt will dispose to the scurvy. This mistake is founded upon the bad effects of the long use of salted-meats; but salt taken with fresh meats is quite a different thing. And I shall just remark, that salt and water is one of the best lotions for the mouth, and preservative from the tooth-ach, (with which many pregnant women are tortured) and also makes an excellent wash for the face; which will remove some kind of pimples without any risk of injury to the constitution.

I SHALL

I SHALL now close this head, with some observations relating to Wet-nurses, and to Weaning.

THE first and essential point in a wet-nurse is, doubtless, that her milk be good; to which end it is necessary she be healthy and young, not of weak nerves, nor disposed to menstruate whilst she gives suck, and that her bowels be rather costive than otherwise. Her nipples should be small, but not short, and the breast prominent, and rather oblong than large; such distention being rather from fat, than from milk. The chief marks of good milk, are its being thin, of a bluish colour, rather sweet, and in great quantity; and if under six months old, it is, doubtless, an advantage. And this is of more consequence, than it seems of late years to be thought; for after this time it generally

96 *especially in regard to their MILK.*

generally becomes too thick for a new-born infant, and is not easily digested. On this account, though an infant may not be really ill, I have frequently observed it not to thrive, though it had taken great plenty of such milk.—A wet-nurse ought to have good teeth; at least her gums should be sound, and of a florid colour. She must be perfectly sober, and rather averse from strong liquors; which young and healthy people seldom need in order to their having plenty of milk. She should be cleanly in her person, good-tempered, careful, fond of children, and watchful in the night, or at least, not liable to suffer in her health from being robbed of her sleep. And I cannot help adding here, that she ought not to be disposed to prescribe medicines; otherwise, something improper can scarcely fail

fail at one time or other to be administered, and perhaps to the no small injury of the child.

THE diet proper for wet-nurses is likewise worthy of notice. And here, an invariable attention should be paid to natural constitution and habit. Due allowance being made for these, it may be said, that milk, broth, and plain white soups, plain puddings, flesh meats of easy digestion, and a due mixture of vegetables, with plenty of diluting drinks, and such proportion of more generous liquors, (spirits excepted) as the variety of circumstances shall direct, will be a proper diet for suckling women. Respecting vegetables particularly, the strictest regard should be had to constitution and habit. Wherever vegetables, or even acids, uniformly agree with the suckling parent or nurse, I believe a healthy child will rarely

98 *Proper Age for WEANING Children.*

suffer by her partaking of them; but on the contrary, the milk being thereby rendered thin and cooling, will prove more nourishing and salutary, in consequence of being easier of digestion. To these regulations should be added an attention to exercise, and frequent walks in the open air: to these, hired wet-nurses have been previously accustomed, and are therefore sure to suffer by confinement to warm rooms, equally to the injury of their own health, and of the infants they suckle.

I COME now to the article of weaning, the proper age for which is to be gathered from the attending circumstances. A child ought to be in good health, especially in regard to its bowels; and, doubtless, ought first to have cut, at least, four of its teeth. This seldom takes place till it is near a twelvemonth old; and it may be observed,

No Preparation, in general, is necessary: 99

observed, that healthy women who suckle their own children, and take proper exercise, do not usually become pregnant again in less time. We shall not be very wide, therefore, of the order of nature, if we say that children in general ought not to be weaned much earlier than this; making proper allowances, however, for all just exceptions to general rules, and especially as far as teething may be concerned.—Small and weakly infants, if rather feeble than ill, are oftentimes benefited by being weaned; they should therefore, about this age, be taken from the breast, instead of being, on account of weakness, nourished much longer in that way: a trial of such a change should, at least, in most instances be made.

Any preparation for weaning is generally needless, and especially that of feeding children before-hand, though

made a common excuse for stuffing them whilst at the breast with indigestible food. I have seen many mothers needlessly torturing themselves with the fear of their children being weaned with difficulty, because they could not get them to feed when eight or ten months old, and still at the breast; but I have always found such children wean, and feed just as well as others, when once taken wholly from it. I, therefore, never have any fear in that respect, and should be happy if any thing I can say from experience, may be the means of lessening the trouble of parents on this occasion, as well as counteracting, if possible, a sentiment encouraged by several writers, which has, I believe, no real foundation in fact, but has too often been productive both of much inconvenience and mischief. But I do not by this intend to say, that
a child

afterwards, during the Night: 101

a child of eight or ten months old would be injured, or oftentimes not benefited, by a little food once a day of a more solid nature than the breast-milk, as, indeed, I have intimated before; but when children happen to be weaned much earlier, and are fed almost from the birth merely with that view, (which is often the case) they may be essentially injured by it.

WHEN the weaning is once entered upon, a great part of their food ought still to be of milk, puddings, broths, and but little meat; and every kind of food, and even drinks should be prohibited in the night, even from the first, supposing them to be weaned at a proper age*. The mere giving them

* The late *Dr. Hunter*, a man, it is well known, of severe sobriety, used at one time to recommend at his lectures to administer on the first night of weaning, a little sack-whey, diluted with barley-

them drink, even only for a few nights, creates the pain and trouble of two weanings instead of one, and if it be continued much longer, it not only breaks the rest, but the child will acquire a habit of being fond of drinking; the consequence of which very often is a large belly, weak bowels, general debility, lax joints, and all the symptoms of rickets. The child need only be fed the last thing before the nurse goes to bed, which may generally be done without waking it; and whilst the child seems to enjoy this sleepy meal, it becomes a most pleasant employment to the nurse, and much more to a mother, from observing how greedily the child takes its food, and how satisfied it

water: this, he used humourously to say, makes infants a little drunk; they all like it, and afterwards go to sleep very comfortably.

will

will lie for many hours on the strength of this meal;—the mention of which naturally leads to the next Article proposed, viz.

SLEEP and WATCHING.

AFTER what has been already advanced on this article, under the head of their Complaints*, only a few observations will be necessary in this place; and first, that healthy children sleep a great deal for the first three or four days after they are born, probably from having been previously accustomed to it. They ought not, however, to be suffered to continue this habit in the day time, to the degree some children are permitted, but should be gradually broken of it; and indeed if not indulged, they will not be so much disposed to

* Vol. I. page 71.

sleep as is generally imagined, and will therefore take more rest in the night, which is mutually beneficial to the child and the mother, if she be within the hearing of it; and especially if she suckles, will be less disturbed at a time when she particularly requires this refreshment.

THEREFORE, when infants are sleepless in the night, they should be kept more awake, and have as much exercise as possible in the day time; which though they be ever so young may be pretty considerable, (as will be directed more at large in its place,) by playing with them, or dandling on the knee, and otherwise amusing them, and when older, by every kind of exercise they can bear. The child, if healthy, will soon contract a habit of being very much awake while it is light, through that lively and restless spirit peculiar to infancy; and by this means,

that their Sleep may be properly regulated. 105

means, another evil will be very much avoided, that of often laying a child down to sleep in the day time, for hours together, loaded with a thick dress, and covered besides with heavy clothes in a soft cradle, or bed.

BUT though I am confident these cautions will have their use, I am equally satisfied that many children have much less sleep than they require; but then this deficiency is chiefly in the night, and is often the consequence of some complaints which the child labours under. Upon these, however, sufficient has been said in the former volumes, to which therefore the reader is referred.

BEFORE I quit this article, it may be remarked, that the custom of constantly placing infants on their backs, whether in the cradle or bed, is very improper; for by this means, the superfluous humour secreted in the mouth,

106 *Not to be laid always on the Back.*

mouth, which, in the time of teething especially, is very considerable, cannot be freely discharged, and must fall down into the stomach, where its abundance occasions various disorders*. Infants should therefore be frequently laid on their sides, particularly the right, as favourable to the stomach getting easily rid of its contents; to which side also children, when strong enough, will instinctively turn, if not prevented by the weight or confinement of their own clothes, or those of the cradle, or bed. The chief apology for all which, is a fear of the infant's falling, or turning on its face; but this is rather an apology for the neglect of that necessary attention to children, which whenever it can be commanded, should never be spared them.

* See vol. I. pages 13, 14.

It only remains, under this article, to say something of the Cradle, which most writers have spoken against. I believe, there is no doubt but the custom of laying children down awake, and rocking them in a cradle in the day time, or at seven or eight o'clock in the evening, when they are to go into their night's sleep, as it is called, may be an occasion of making them more wakeful in the night, or at least may cause them to expect that kind of motion whenever they awake. But yet I cannot help thinking, there is something so truly natural, as well as pleasant, in the wavy motion of a cradle, (when made use of at proper times) and so like what all children are used to before they are born, being then suspended and accustomed to ride, as it were, or be gently swung in a soft fluid, upon every motion of the mother, and even during her sleep,

from

108 *Whose Motion is safe and natural,*

from the effects of respiration; that, always wishing to follow nature as I do, I cannot, on the whole, but give an opinion rather in favour of the cradle. It is, at least, amongst the *little* things in which we may harmlessly err, and in which every mother may therefore be safely guided by her own opinion, or even by her feelings. And if the child in consequence of being sometimes rocked to sleep in the day time, shall expect it when it awakes in the night, it will not be very difficult to find a substitute for it; and indeed parents seem, as it were by instinct, to pat and gently move a child, whether lying on the lap or the arm, whenever it appears to awake prematurely. The objections to the cradle made by some late writers, militate only against the abuse of it, from any violent rocking; as though infants must necessarily be
jumbled

jumbled in a cradle like travellers in a mail-coach. For I cannot easily persuade myself, that we are in every thing become so much wiser than our fore-fathers; with whom for some ages, and in distant countries, amongst rich and poor, the cradle has been judged to be a necessary part of family furniture.

I SHALL only add on the article of sleep, what cannot be too often urged, that however wakeful a child may be in the night, it cannot receive a greater unkindness than from the exhibition of *Godfrey's* cordial, syrup of poppies, or any other opiate, and given as they usually are, to procure sleep, not because it is necessary, or proper for the child, but because it is convenient to the nurse. It were, therefore, a good rule in the nursery, to forbid administering *any* kind of medicine without an express permission,

fion. And in regard to watchfulness, as was observed in another place, it is usually a mere symptom, and should be treated according to its cause; but in a general way it may be said, that nothing can so safely and effectually contribute to procure natural rest as that exercise to be further considered under the next head.

MOTION and REST.

IT is chiefly the former of these that will claim our attention, and it is, indeed, worthy of particular notice, as infants ought scarcely ever to be in a quiescent posture, except when asleep; and happy for them, that active principle with which nature hath endowed them, is so vigorous and overflowing, that they will hardly submit to it. Exercise, like air, is
indeed

Exercise is of the greatest Importance, III

indeed of so much importance to children, that they cannot possibly be truly healthy without it; care only should be taken that it be properly suited to their age.

THE first kind of exercise, it has been said, consists in dandling, as it is called, patting the back after feeding, and gently raising the child up and down in the arms; taking care at first not to toss it very high, infants being very early susceptible of fear, and even capable of being thrown into fits by it. Another exercise adapted to this tender age, and of the utmost advantage, is rubbing them with the hand. This should be done *all over*, at least twice a day, when they are dressed and undressed, and especially, as noticed before, along the whole course of the back-bone; and ought to be continued for some time, being peculiarly agreeable to the
the

112 *and should be begun with very early.*

the child, as it constantly testifies by stretching out its little limbs, and pushing them against the hand, with a smile expressive of the satisfaction it receives. Such gentle exercise may be partially repeated every time the child's cloths are changed, by rubbing the lower limbs, and every other part within reach. Likewise dashing the face with cold water, in the manner recommended for the rickets*, but more lightly, will produce the effects of exercise well adapted to this age.

WHEN children are older, their exercise should be proportionally increased, and as has been observed, they ought never to be carried in a quiescent posture, but the arm that supports them should be continually in such motion as the nurse is able to

* Vol. I. page 349.

continue.

continue. For children, it has been noticed, delight to be in constant motion; and this exuberant activity is given them for the wisest purposes, and ought by no means to be counteracted. And I notice the mode of carrying them, because I have seen children slung carelessly over the arm in such a manner, as neither affords a child any exercise, nor allows it to give any motion to itself; which a lively child will always endeavour to do. And, indeed, the manner of carrying an infant, is of more importance than is generally imagined, for from it, the child will contract a habit, good or bad, that it will not readily give up, and may be as much disposed to become rickety by improper management in the arms, as if it were lying wet in the cradle; the ill effects of which have been pointed out already.

114 *Children should be put on their Feet*

It may be a proper inquiry in this place, at what age children should be put on their feet, a point on which people have differed considerably; but I apprehend nothing more is required than to follow nature, whose progress is always gradual, as our imitations of her should be, and we shall then seldom run very wide of her intentions. If we take notice of a healthy child, it has been said, we shall observe it to be always in motion, and as soon as it gets strength, it will be supporting itself by the help of its hands and feet, and be crawling about, wherever it is permitted. From this exercise, it will soon acquire an increase of strength, and whenever it is upheld by the arms, and disentangled from the weight of its clothes at the time of dressing and undressing, it will naturally walk up the waist of
its

with great Caution, and not be urged on 115

its mother, or nurse*, and by its manner of moving its limbs, and its bearing more or less on the arms, will shew what advances it has made. Whenever it is strong enough, it will have attained sufficient knowledge to walk by itself, and will never attempt it till it is fully equal to the task. It will then be perfectly safe to permit

* I cannot help taking notice here of an imprudence on this occasion, which it is well if it have not been prejudicial oftener than has been suspected; I mean, that of suffering a child to crawl so high up the neck, as renders the mother, or nurse, incapable of raising the arms high enough to support it: for not only may a child be suffered to slip out of the hands, but the mother may be injured. I have felt much on this occasion, from seeing tender and delicate ladies with their arms on a stretch, suffering a heavy child, perhaps with its shoes on, to crawl over the breasts, distended with milk, and squeezing them so forcibly against the edge of the stays, that they have sometimes cried out from the pain, and yet not been able, at the moment, to bring the infant down into the lap.

116 *till they be disposed to it of themselves;*

it to follow its inclination, at least as far as the straitness of its limbs is concerned; and I think I may defy any one to produce a single instance of a child getting crooked legs, from being suffered to walk as soon as it has been disposed to make the attempt. But nowise ought nature to be forced; a maxim applicable to every other occasion; “aware (as a writer before quoted, finely observes) that whatever forms may, by artifice, be intruded upon her, and she compelled to assume, to enlarge or contract her bias and inclination, she can never be made, eventually, to deviate without manifest injury to herself, from the station and bounds unalterably impressed upon her by the unerring Power, which first created, and gave her Laws.”—But the mischief is, we lead on children prematurely to the trial, by back-strings, goe-carts,

which they will not fail to do in good time. 117

carts, and other contrivances, calculated only to spare idle nursery-maids*, or what is really pitiable, to allow poor people time to attend to other concerns, who are obliged to work for their bread. But where this is not the case, such contrivances are unpar-

* I cannot avoid once more risking giving offence, that I may do every thing in my power to induce parents to give the utmost attention in regard to exercise; for the want of which I have, with much concern, beheld some children of people of large fortunes turn out as rickety as those of the labouring poor. In some instances, I have been so satisfied this has been owing merely to a want of exercise, that I have informed ladies, that from the appearance and manner of the nursery-maid, I was certain their children were not exercised sufficiently, and have pointed out the bad consequences that must ensue. And where the advice has not been taken, I have as constantly been consulted some months afterwards, about the cold-bath, for children of a year and half, or two years old, who have only been able to waddle across the room, with their knees knocking together, and reeling at every step, so as not to be trusted, for a moment, alone.

118 *For want of Caution, however,*

donable and are the consequence of ignorance, or idleness which are productive of great evils; and then by way of excuse it is asked, at what age a child may be put on its feet?—A question, I apprehend, that ought to be replied to only in the manner I have done*—Leave children to themselves, and they will afford a satisfactory answer in good time.

It is said, however, by a sensible writer†, that children's legs do not become crooked by putting them too early on their feet, and he asks if any other animal has crooked legs, though they stand on them almost as soon as they are born. But the cases, I ap-

* I have seen a child walking alone before it has been nine months old, and at ten months, carrying a heavy plaything in its hands; whilst other children, rendered weak and rickety by mismanagement, have been unable to do half as much at two years of age.

† Dr. HUGH SMITH, *Letters to married-women.*

prehend,

they will often become crooked; 119

prehend, are widely different; quadrupeds and fowls are designed by nature to be early on their legs, and it is necessary they should be so. They are accordingly calculated for it, their bones being strong from the birth, instead of little more than gristle, as is the case with the human species; and therefore no argument can be founded upon it without considerable latitude, and making such allowances for the different circumstances of children as have been pointed out. But if it be meant only to suffer children *to feel their way*, if I may so speak, for themselves, they will never deceive us; nor do I think their limbs ever become crooked, but by urging them to it by contrivances of our own, for which poverty is the only apology that can possibly be offered.

A NOTE of Dr. BUCHAN on the subject of giving exercise to children, which some people from their poverty

120 *and oftentimes before they go alone.*

cannot spare time to afford them, charmed me exceedingly. The good sense and philanthropy manifested in it, as well as a desire of extending its useful contents, will I hope be apology sufficient for transcribing it, especially as it is at present so apposite to my purpose. And though I cannot flatter myself that Government, however benevolently disposed, will, or perhaps can, at this time, adopt such a plan, either from his recommendation or mine, it is, nevertheless, in the power of people of large fortune, both in town and country, to give it very considerable influence, especially if the premium were made double for such children as should be produced in good health. The Doctor's words are,

“ If it were made the interest of
“ the poor to keep their children
“ alive, we should lose very few of
“ them. A small premium given
“ every

Summary Calculation of the Average 121

“ every year to each poor family;
“ for every child they have alive at
“ the year’s end, would save more
“ infants lives than if the whole re-
“ venue of the crown were expended
“ on hospitals for that purpose. This
“ would make the poor esteem fer-
“ tility a blessing, whereas many of
“ them think it the greatest curse that
“ can befall them;” and I may add,
I have known them express great
thankfulness, when any of their chil-
dren have died.

THE advice contained in this chap-
ter is further worthy of serious atten-
tion from late discoveries of a much
greater fatality amongst the children
of the poor of this metropolis than
has ever been suspected.

To ascertain the fact, an enquiry
has been for some time set on foot,
at the *British lying-in Hospital*. In-
quiries have likewise been making
ever

ever since in different ways; and I have no reason to suspect that the statement made out from the report of the women offering themselves at the Hospital, is at all beyond the fatality in other poor families in *London*, but, indeed, rather under it, in regard to still poorer people.

THE following is a brief statement of the investigation at the hospital, during the first year:

SEVERAL women who had borne	
3 Children, had lost as many as 2	
4 - - - - -	3
5 - - - - -	4
6 - - - - -	5
7 - - - - -	6
8 - - - - -	7
9 - - - - -	8
10 - - - - -	9
11 - - - - -	8 and 10
12 - - - - -	10 and 11
14 - - - - -	11,
	and

from Neglect and Mismanagement, 123

and several of the mothers of different numbers had lost them all.

DURING another long period, only one woman, having borne as many as five children, had reared them all; and one having had twelve, had *eight* living. But some having had four, had lost *three*; and five, had lost *four*; and six, *five*; and seven, *six*; and eight, *six* and *seven*; and ten, *seven* and *nine*; and women having borne eleven and twelve, had lost *eight*, *nine* and *ten*; and fourteen, *eight*: with many who had borne four, five, and six, and one twelve, had buried them all.—In addition to this, may be remarked the sad and rickety state of many of the surviving children.

THE above, indeed, contains the most formidable view of this matter, but the most favourable is, by no means, such as to counterbalance it; there being during a year and a half,

no

no more than three women, I think, who having borne only three children, and one woman, (lately come from the country) with four children, who had lost none of them. Only one having had as many as six, had them all living; and another, who had preserved eight children out of ten. Amongst the surviving ones, however, it was frequently observed, was the last born; therefore one less likely to be reared than an older child.

FROM these different degrees of fatality, further contrasted with the small number of deaths in the *hospital*, within the month*, we may suspect the different care and attention bestowed upon young children, as well as the want of certain accommodations; and may fairly argue on their effects.

* See the *Introduction* to this volume.

It would be unpardonable not to add a few words in this place with a peculiar reference to *females*; upon whom beside every infirmity common to the other sex, is imposed the painful task of child-bearing. It is the benefit of the lower class of people, indeed, that I have here principally in view; though the caution is not utterly unnecessary elsewhere.—The many distressing, and sometimes fatal labours I have been witness to, have led me to regard with a kind of horror a rickety, distorted female infant, whose parents or nurse's neglect, or ignorance, is heaping up for it additional sufferings and dangers, to those which are great enough under every advantage that art, and good health can contribute.

FROM the age of two years therefore, or rather earlier, this care is especially called for, and beside every
caution

caution already pointed out, lays a strict prohibition on girls being suffered to sit, for hours together, on a low seat, whereby that assemblage of bones, called the basin, is pressed between the lower extremities and the trunk, and is made to grow out of its natural form. The consequences of this change of figure, if it be anywise considerable, cannot fail to be productive of increased pain and dangers in child-birth, frequently equally fatal both to the parent and her offspring.

I AM aware, that many poor people are not in circumstances to give their children all the exercise they require; they may, however, suffer them to afford as much as possible to themselves, by allowing them to crawl about on the floor, near an open window or door, instead of compelling them to lie on their back, or to sit upright, pinned

A Deficiency of REST is also injurious. 127

pinned in a chair; the ill-consequences of which are so exceedingly evident.

It is hoped, no apology may be thought necessary for these obvious remarks, since no pains should be thought too great if they may prevent the evils here pointed out, nor can too much be said to inculcate good nursing, (and especially exercise) which is alone adequate thereto*.

A VERY few words may suffice on the head of REST, the irregularities therein being far less numerous and important than in the former. It will be sufficient to notice them in regard to the improper inducement of young chil-

* A proper attention to this, and many of the preceding articles has been conceived to be of so much importance, that the benevolent Governors of the *British* Lying-in Hospital, some years ago gave orders, that suitable Directions on these heads should be drawn up, and given to every mother, on her leaving that Charity.

dren

dren to continue in action after they feel themselves wearied, and in keeping them out of bed beyond a proper hour. Children in health never wish to sit still when they do not actually feel it to be necessary, much less to go to bed over early. But it is to be remembered, that young people require more sleep, and to be longer in a recumbent posture than adults; for though they usually rise very early, they get to rest more than proportionally soon, being disposed to fall asleep almost the moment they are still; and this is natural to them, and is a demonstration of the advantage of exercise.

PROLIX as this article may appear, it may, nevertheless, add a completeness acceptable, to many readers, to comprehend under it several things relating to the different *Modes* of Motion and Rest, and pointing out many im-

improprieties that have a natural tendency to induce, or increase various corresponding deformities.

THESE will relate to the manner of children's *standing, walking, sitting and lying*, and will particularly respect the position of the head and feet, and the form of the back, shoulders, and hips. It may not therefore be improper in this place, nor it is hoped, be thought going out of the true line of my profession to advert a little on each of these. Indeed, to propose regulations of any kind merely with a view to a graceful manner of standing or walking, would be highly incompatible with the intention of the work; but since this part of it, more particularly, falls under the direct province of parents, they may not be displeased that it should aim at general usefulness, by calling their attention to certain particulars, which for want of correction

whilst children are under their own eye, may, as they grow up, become real evils. For it is very certain, that from an improper manner of resting upon any of the extremities, whether in sitting or otherwise, different parts may take an ill form; and what is worse than an awkward appearance, (to which parents are apt to confine their attention) children often grow up weak; whereby the poor become unfit for those labours and exercises for which they are designed, and the necessities of their situation frequently demand.

AND I heré beg leave to remark to people of rank, that the very means frequently made use of to prevent some of these deformities, may on the contrary, occasion them. Such are the use of steel-collars, various sorts of stiff stays, and other tight bandages. For I am confident, nor am I singular in the
the

the opinion, that when recourse is had to these things, before any parts have taken a wrong turn, they are very likely to occasion it. Not that such contrivances are afterwards improper; for when the bones have, by any means, been thrown out of their natural direction, Art can frequently rectify it, and point out where to apply, or to take off pressure. But before this, and while the bones are soft and growing, compression, however properly applied, is in effect oftentimes ill-directed, owing to the continual and irregular action of children, especially when they feel any parts unpleasantly confined. I may take this occasion also of submitting a caution in regard to the stocks for the feet of children, and the frame for pressing in their knees, which when made use of to an excess, may become highly injurious.

132 *pointed out in a way of Amusement,*

I COME now to the circumstances immediately hinted at, and first those which regard the head or neck.

MANY infants come into the world either with the neck drawn a little to one side, or an awkward turn of the head appears to take place afterwards. In the latter instance, it may be the effect of habit, and amongst other causes may be owing to children being placed in the cradle, or carried improperly, so that the light, and other objects that forcibly attract their notice, are too frequently on the same side. The remedy in either case, as far as it may become such, is obvious, and has been hinted in the chapter on squinting; every thing should be so contrived as may tend to draw the head to the other side, and especially such things as may have a sudden and forcible operation on the muscles, by producing strong voluntary motions. It
may

or otherwise, and suitably adapted, 133

may not, perhaps, occur to every one, how much may be effected by such means. Several striking instances of it, however, have been met with*; and we daily observe similar effects of a certain position in flowers and shrubs, which without any help from the hand, turn about, obedient to the air and sun operating upon their internal structure. For the like reason, as well as

* AN Ambassador from *Morocco* being at *Paris* went to see the *Charity-Hospital*, where passing the ward for the wounded, six of them who had not stirred for several months before, rose up and came to the Ambassador, to the great surprise of the whole hospital†; curiosity or surprise effecting that, which the most powerful medicines could not, in so short a time.—The like circumstance is reported to have taken place very lately, from a fire happening in the house where an elderly lady had long lain bed-ridden; who perceiving the fire, suddenly rose from her bed, without any assistance, and ran into the street!

† *Histoire de l'Ambassadeur de Maroc, Envoyé au Roi de France, en 1682.*

134 *as may be very easily complied with,*

to avoid increasing the disposition to growing out, that there may be in any part of the ribs or back bone, children of a delicate make should not sit always on the same side of the fire, or window, which might incline them to bend too much to one side ; nor should they stand in a very erect posture for a very long time, but be suffered to sit oftentimes between whiles, in a chair that has a back to it, against which they may carefully recline themselves.

THE next observations respect the back and shoulders—Some young children, naturally well-formed, acquire after a while what is termed round-shoulders ; the back-bone projecting too much behind, and forming an unsightly curve.

THE *morbid* affection of this part has been mentioned already ; I have only to notice here a change arising merely from some bad habit or custom, through
an

an improper manner of *sitting* or *standing*. In regard to the former, it may be observed, that the soft concave-bottomed chairs, in which young children usually sit, are on many accounts improper for their years, who should always make use of a flat and hard seat, and generally without arms, as directed for the falling down of the gut; which complaint it would have a tendency to prevent. But in the hollow-bottomed chairs children find themselves obliged to recline in one way or other, or to be making certain exertions for keeping themselves upright, and preserving a proper ballance of the body; and it is obvious, that either a bending posture, or the efforts necessary to avoid it, if often repeated, may become hurtful to weakly children.

AN improper manner of *standing*, though less frequently a source of this kind of mischief, on account of the

position being more frequently varied than in sitting, is, nevertheless, capable of giving an awkward turn to the back and shoulders, as well as to the feet. We are creatures of habit, both in respect to our bodies and minds, so that to whatever we may have for a little while accustomed ourselves, we have an increasing propensity; and when the habit is once formed it is very difficultly broken. Children should therefore be early accustomed to stand very upright, instead of being suffered to lean upon whatever may happen to be near them, as they are frequently disposed to do.

SHOULD one of the shoulder-blades project more than the other, the child should lie as much as may be on the contrary side; as the shoulder upon which one lies always projects beyond the plane of the back. When the shoulders themselves happen to be too high,

high, a child so disposed should never be suffered to sit in an elbow-chair; nor should any child sit before a table, that is either much too high or too low for the seat in which he may be placed, especially if it be for the purpose of reading, writing, or any other employment that may engage him for any length of time. But if one of the shoulders be higher than the other, the child should frequently be directed to stand only upon the foot of that side, at least to bear his weight chiefly upon it; by which means, the shoulder that is too high must necessarily fall lower, and the other be raised: or a small weight may be put upon the shoulder that is too low, which will incline the child to raise it up. Or he may be caused frequently to carry a light chair, or such like play-thing, in the hand of that side, which will have the same effect. The like means should be used
when

when one hip is higher than the other, which is both a very common and peculiarly unfortunate complaint.

ANOTHER easy and efficacious mean of rectifying the shoulders, is to make the child support himself with a very short cane on the side where the shoulder is too high, which will oblige him to lower it; and at other times, to put one that is too long for him into the other hand, which will raise the shoulder on that side. He may likewise often sit in a chair with two arms, one of them being made a little higher than the other.

THESE and other similar means may be very easily complied with, and several of them so managed as to be made a sort of play or amusement to the child; and if properly persevered in, will correct many deformities that have originated merely from bad habits, as well as conspire with other contrivances

ances to remedy such as may depend upon a slight mal-formation.

THE *Feet* of children, it has been said, are likewise liable to receive an improper turn; and this may arise from habit, as well as from original mal-formation, which has already been noticed. Children when conversing with those with whom they are familiar, seldom stand firmly on their feet, but are apt to lean upon one side of them, so as to bear almost upon the ankle, instead of the soles of the feet. By degrees, this habit is not only increased, but the tendons themselves are disposed to contract, or those on the opposite side become weakened. In the like manner, by standing upon the toes, the tendon of the heel, in time, becomes shorter, as is manifest in every woman who wears very high-heeled shoes. To obviate the former, little more is required, than to correct the
child's

child's manner of standing, by teaching him to bear firmly on the bottom of his feet: or if a foot be turned very much to either side, the sole of the shoe may be thickened upon the side on which the child bears. If by treading on the toes, the heel is become contracted, the heel-piece should be taken off from that shoe, instead of its being raised; as hath sometimes been very improperly done. Beside this, such children should be frequently caused to walk up steep ascents, by which they will be obliged to bear up the fore-part of the foot, whereby the tendon of the leg will be stretched, and the heel must fall lower.

Most of the remedies proposed for these little disorders, will have another advantage, as they necessarily inculcate exercise; in favour of which, so much has been said: the great neglect of it, especially among the poor, is daily

daily lamented by every man of observation and feeling, and the more so, as it is a Good they cannot always command.

If I had not already far exceeded the bounds I had intended, I should be induced to say something on the Manner in which Exercise becomes so beneficial to children—I shall, however, just observe, that it tends to push forward the blood through the small vessels, and to unfold them in the manner nature has designed them to be extended, in order to promote the growth of the infant, whilst it preserves the blood in a proper state of fluidity, and promotes both the Secretions and Excretions*;
which

* THESE particulars are well expressed by *Monfr. DES-ESSARTZ*; from whose fuller account, let the following suffice by way of illustration to intelligent parents:

which are the next things it was proposed to consider.

RETENTION

“ LA liaison et la dépendance que l'auteur suppose de la nature a établies entre toutes les parties de ce composé merveilleux, sont si intimes, que le Prince de la Médecine nous a représenté le corps animé, et jouissant de ses fonctions, comme un cercle dans lequel on ne peut reconnoître ni commencement, ni fin.—En effet, les instrumens destinés à la chylification tirent toute leur force des organes de la sanguification, ceux-ci des nerfs et du fluide qu'ils contiennent : et ce fluide (si nous en croyons le système le plus universellement adopté, et auquel il manque peu de chose pour être démontré ; ce fluide) tire son origine du sang, et le sang des alimens que nous prenons tous les jours.—De la constance et de la régularité de fonctions aussi différentes et aussi multipliées dépend notre santé et notre vie. Il ne suffit pas de prendre des nourritures, il faut qu'elles soient bien digérées, changées en sang, et ce sang doit être assez travaillé pour fournir non seulement la lymphe nourricière de tout le corps, mais encore un fluide très-subtil qu'on appelle fluide animal. Chaque liqueur doit être séparée dans ses glandes, et celles que la nature

RETENTION and EXCRETION.

THE reader is here to be apprized, how greatly health depends upon a due

nature rejette comme inutiles et dangereuses, doivent être poussées au dehors.

OR, rien n'est plus propre à faciliter et à perfectionner toutes ces opérations, que l'Exercise. Si nous jettons les yeux sur notre corps, nous y apercevrons une multitude de vaisseaux qui sont entrelassés les uns dans les autres, serpentans entre les fibres musculaires, à la pression successive desquelles ils doivent une grande partie de leur mouvement et de leur action sur les fluides. A mesure que les muscles entrent en jeu, ils produisent des secousses reiterées sur les vaisseaux sanguins, qui se communiquent dans tout le système artériel et veineux. Ces secousses non seulement procurent aux fibres la force, et la souplesse, qui caractérisent leur bonne constitution, mais elles broient, atténuent et subtilisent les liquides contenus dans les vaisseaux, achevent la transmutation du chyle en sang, en lympe, et en fluide animal; la circulation

144 *very common, and is generally*

due proportion between the daily supplies, and the various discharges of the body : the latter will vary according to the diet, age, and particular mode of each individual. The excretions of infants, however, insensible perspiration excepted, are chiefly from the bowels and bladder ; but the latter is not very liable to disorders. After what has been already advanced under the head of *Diseases*, it will be sufficient, therefore, to say, that the retention of urine during early infancy is chiefly from the birth, and is usually removed by applying a bladder of hot water to the belly, and gently rubbing with a little warm brandy, with oil of juniper and oil of almonds, or an onion ; and throwing up a clyster : or should these

culation est plus libre, les sécrétions se font mieux, et plus uniformément, et la digestion en devient plus parfaite.—*Traite de l'éducation corporelle des Enfants en bas Age.*

fail,

fail, the infant may be put up to the breast in a pan of warm water, and take a large spoonful of marsh-mallow, parsley, or wild-carrot-tea, sweetened with honey, with the addition of two or three drops of the spirit of nitrous ether. This, if there be no malformation of parts, will generally produce the desired effect in the course of a few hours; though cases have occurred in which infants have voided no urine for the space of four days, and have suffered very little inconvenience: I have even known one instance of a suppression for five days; and it is remarkable, that two former infants in this family voided no urine for three days. Should the suppression, however, continue during two complete days, the following cataplasm may be applied warm above the share-bone.

TAKE of parsley and mallow-roots, leaves of cresses, and juniper-berries,

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of

146 *Incontinence of Urine less common.*

of each a handful, and of the roots of garlic one ounce; boil them slowly in water, or in wine, to the proper consistence for a poultice. On the other hand, the sudden application of cold to the lower part of the belly has sometimes produced an immediate good effect. Where all these means have failed, and the infant been in much pain, I have directed a very small clyster with four or five drops of laudanum, which has presently removed both the pain and suppression.

SOME of the old writers have spoken also of incontinence of urine, arising from weakness of the sphincter (or contracting muscle) of the bladder; but I have never met with it in early infancy. They prescribe agrimony and myrrh, and direct astringent fomentations of red wine to the belly, the seat, and the loins.

THE present observations are therefore chiefly confined to the Bowels,
which

which would call for a scrupulous attention in this place, if so many things relative to them had not been discussed in a former part of this work. It were needless, therefore, to say more, than to remind the reader, that (as far as general rules may go) infants are rarely healthy long together, who have not two or three stools every day; or should they be more, for the first three months, if the child be brought up at the breast, and the nurse have a sufficiency of milk, it will generally thrive the better. The stools likewise ought to be loose, of a yellow colour, free from lumps, or curdy matter; neither of an acid nor fetid smell; and should come away without griping. When children are about a year old, or perhaps earlier, pains should be taken to procure one stool at least every day, as well periodically, as constantly; and for this, the morning is most adapted,

148 *and demand a scrupulous Attention.*

and after breakfast, by which the stomach and bowels will be stimulated. To this end, they should be set on the chair, and not suffered to play until they have had an opening, for which they should strain, till at length it becomes customary, which may be easily effected; and by which we shall gain a point, with respect to the health of children. On the other hand, if an infant is brought up by hand, the danger generally lies in the other extreme, such children being disposed to be purged, and to have griping and sour stools, from the acescent, and often indigestible nature of their food, especially if fed by the spoon; and therefore require an early attention when their bowels are disposed to be open, and their food to be changed, in the manner directed under the article of Purging.

The

The PASSIONS of the MIND.

THIS is the last Article mentioned as included in the *Non-naturals*; and on which I shall be very brief, it being the happiness of Infants to be very little affected by them. This article, therefore, can relate to them merely in regard to their mode of expressing such passions, and principally respects Laughter and Crying. The former, if long kept up, or very violent, may not only induce the hic-cough, but it is said, may even throw an infant into fits. The latter is, indeed, much oftener suspected of being mischievous, and chiefly by occasioning fits, or a rupture: the excess of both these affections should, therefore, be guarded against. Moderate, and not too frequent Crying, however,

ought not to be alarming; and, indeed, a variety of considerations induce me to believe, that this expression of the passions in Infants is not only much more harmless in itself than is generally imagined, but is also, in some respects salutary. The first Cries it makes we know to be so, and that children recover from the paroxysms of some complaints (as was mentioned in regard to the Croup) by an effort of this kind. It is evident likewise, how very much health depends on a free circulation of the blood through the lungs, and on their free expansion from the dilatation of the air-vessels, that run through them*. But as new-born infants are incapable of giving themselves any exercise, and indeed of receiving that kind which

* “ Moderate crying is not hurtful to children, (says *Primrose*): “ it dilates and warms the chest.”

tends

tends to promote such an effect, I have conceived Crying to be an effort which Nature may have wisely substituted in its stead. Whatever is truly natural I always conceive to be right, though every thing, is capable of being abused, and the most beneficial dictates of nature may be exceeded. I am satisfied, however, that the pacifying of children by improper means, and especially cramming them with food when they are not hungry, (against which so much has been said) occasions far greater evils in thousands of instances, than ever were produced by the irritation from Crying. The crying of infants, however, is very commonly plaintive; and as it seems to argue distress, cannot but create it in every person of sensibility around them. The Nurse, therefore, who can with calmness, hear an Infant cry, without attempting to pacify it, by

every proper mean, is a Monster in human shape, unfit to be trusted with the care of any animal being, much less with a tender, helpless creature, whose only language, by which it can express its wants or its sufferings, is its TEARS.

I CANNOT take my leave of the reader without offering one apology more for having dwelt so long on this, and some other heads less important than the rest; my motive has been the desire of instructing, though in some instances at the risk of tiring, or otherwise displeasing; and for the sake of my fair readers, for whose use the present edition is wholly calculated, I have endeavoured to lessen their Fears, as far as those have appeared to be needless, wherever no other Remedy could be offered.

I SHALL conclude by observing, that, though the Passions of the Mind,
refer

refer so little to Infants, they relate very materially to the Wet-nurse; who besides endeavouring to keep her spirits as calm as possible, ought to be exceedingly careful not to put a child to her breast, when under the influence of any violent passion, of whatever kind it may be, the bad effects of which have already been instanced under the head of Diseases*. And I shall think myself well recompensed for the trouble I have had, if this, or other hints, may prove the means of lessening the dangers of the infant-state, and the consequent sad fatality that attends it; as well as of abating the anxiety of the fond Mother, who after having brought her tender Charge into the world with Sorrow, is pierced with double Pangs at its leaving it—An event which,

* *Vol. I. page 174.*

154 *if not the future Comfort of Children.*

as Experience warrants me to say,
may by Art and good Management,
be often prevented, the author ardently
hopes the fond Parent may have
fewer occasions to lament, and her
rising Sons be athletic.

THE END.



AN
ALPHABETICAL LIST
OF

Medicines recommended in this Work,

TO WHICH

The COLLEGE of PHYSICIANS have given
New Names.

NEW NAMES.

Names formerly in Use.

A.

AROMATIC	Con-	Cordial Confection.
fection.		

C.

Catechu.
Calx of Antimony.

Japan earth.
Calcined Antimony.
Camphorated

Camphorated Spirit.	Camphorated Spirit of wine.
Compound water of acetated Litharge.	Vegeto-mineral water.
Compound Tincture of Gentian.	Bitter Tincture.
Compound Tincture of Aloes.	Elixir of Aloes.
Compound Spirit of vitriolic Ether.	Hoffman's anodyne Liquor.
Compound Spirit of Ammonia.	Aromatic volatile Spirit.

L.

Labdanum-plaister.	Stomach-plaister.
Litharge-plaister.	The Common Plaister, or Simple Diachylon.

M.

Muriatic Acid.	Spirit of Sea-salt.
Muriated Quicksilver.	White corrosive sublimate.

Nitrated

N.

Nitrated Silver.

Lunar Caustic.

O.

Ointment of acetated Ceruse. Ointment of Lead.

Ointment of Nitrated Quickfilver. Citrine Ointment.

Ointment of the white Calx of Quickfilver. Ointment of white Precipitate.

P.

Powder of Scammony with Calomel. Basilic Powder.

Prepared Natron. Salt of Soda.

Prepared Water of Kali. Ley of Tartar.

S.

Spirit of vitriolic Ether. Sweet Spirit of Vitriol.

Spirit of nitrous Ether. Sweet Spirit of Nitre.

Tartarised

T.

Tartarified Antimony.

Tartarified Natron.

Tincture of Catechu.

Tincture of Opium.

Emetic Tartar.

Rochelle Salts.

Tincture of Japan-earth.

Laudanum.

V.

Volatile Liquor of Harts-
horn.

Spirit of Harts-horn.

W.

Water of acetated Am-
monia.

Water of acetated Li-
tharge.

Water of Ammonia.

Mindererus's Spirit.

Extract of Lead.

Volatile Spirit of Salt
Ammoniac.

Water

Water of ammoniated Sapphire water.
Copper.

Water of pure Kali. Soap Ley.



